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### Publication Date

2022-08-01

Peer reviewed

# A Call for Action: Conceptualizing Assets-Based Inclusive Design as a Social Movement to Address Systemic Inequities

An Assets-Based Inclusive Design Framework

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Digital technologies shape how individuals, communities, and societies interact; yet they are far from equitable. This paper presents a framework that challenges the “one-view-fits-all” design approach to digital health tools. We explore systemic issues of power to evaluate the multidimensional indicators of Latino health outcomes and how technology can support well-being. Our proposed framework enables designers to gain a better understanding of how marginalized communities use digital technologies to navigate unique challenges. As an innovative and possibly controversial approach to assets-based design, we stress the importance of industry and academia self-reflection on their organization’s role in the marginalization of communities in addition to valuing the lived experiences of marginalized communities. Through this approach, designers may avoid amplifying structural and health inequities in marginalized communities.

**CCS CONCEPTS** • Collaborative and Social Computing Design and Evaluation Methods • Collaborative and Social Computing Theory, Concepts, and Paradigms • HCI Theory, Concepts, and Models • Cultural Characteristics

**Additional Keywords and Phrases:** Assets-based design, equity, Latino community, participatory design, digital health

## ACM Reference Format:

Veronica Ahumada-Newhart, J. Maya Hernandez, Karla Badillo-Urquiola. 2021. A Call for Action: Conceptualizing an Assets-Based Inclusive Design as a Social Movement to Address Systemic Inequities.

## 1 Introduction

We live in a time of history where the diversity of the population within the United States is at its highest [11]. Groups previously noted as racial and ethnic minorities are now considered the majority among youth, with Latinos being among the largest, fastest growing and youngest major ethnic group in the United States [16]. With this growth in population numbers, Latino youth are also among the most rapid adopters of smartphone technologies as a mechanism to bridge the

digital divide of broadband access [18]. Yet severe systemic disparities in the offline spaces (e.g., healthcare, education, industry) have muted the vast opportunities for an equitable digital space, especially for digital health support and services. **Healthcare and education are human rights.** They are prime examples of spaces in which opportunities exist for academia and industry to work together to bridge existing inequities, design digital tools that transform daily well-being and build on existing community strengths to survive health disasters such as COVID-19. Industries and academic researchers have attempted more inclusive design and participation practices for actionable solutions. However, we remain severely behind in these efforts. There also exists an immediate instinct to address deficits within underserved and underrepresented communities, but strengths, or *assets*, are key components to harness optimal opportunities for equitable digital solutions. Therefore, we pose the question: How can we address these disparities through an assets-based approach with inclusion in mind?

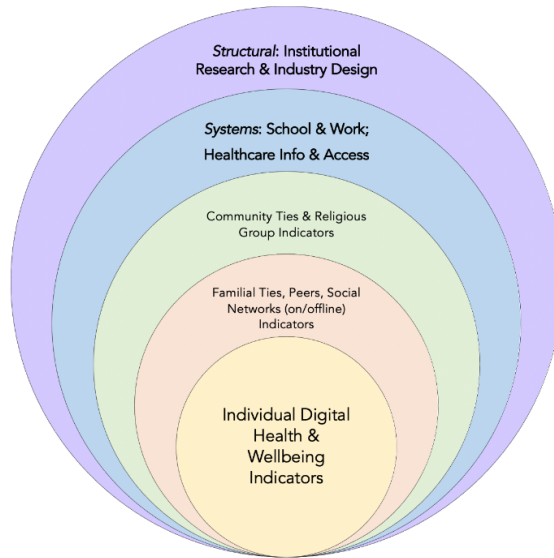
Throughout this paper, we examine inequities in offline spaces that translate to the digital world and the effects of a global health disaster (i.e., COVID-19) on the Latino community in California (CA). We selected California as our case scenario, because, 1) it is the US state with the largest Latino population at 15.5 Million [31], 2) many tech industry leaders are headquartered in CA and, thus, inextricably tied to this population, 3) data are readily available on the marginalizing practices in offline spaces within the state.

Virtual schooling, telehealth, and online mental health resources are just a few of the life adjustments many have had to face during COVID-19 [19]. Yet, it goes with little acknowledgement that existing power structures challenge many Latinos with much more, such as larger intergenerational households, income disparities, employment as front-line workers, or limited access to technology tools--all of which often elevate stress, anxiety, and increase risks overall. While it is beyond the scope of this paper to identify contributing factors to COVID-19 incidence and fatality rates, in order to examine lived experiences, we highlight that in CA, **Latinos currently make up 71% of COVID-19 fatalities in ages 18-34** (i.e., working ages) even though this age group is only 39.5% of the state's population [32]. From a design perspective, this tragic and decimating effect on the Latino community in CA is a significant factor in the social context of the lived experience.

To understand the digital social determinants of health that affect Latinos, we must recognize the structural (e.g., academic and industry) inequities in the design space as well as the lived experiences which have recently been impacted and exacerbated by the COVID-19 pandemic--with Latino communities being among the hardest affected [32]. Researchers have highlighted that the tragic effects of COVID-19 are not related to ethnicity or race but may have more to do with the social determinants of health [1]. Understanding the social context of this lived experience and the digital social determinants of health allows us to look in depth at the social structures and organization cultures that contribute to marginalizing practices. With this paper, we aim to (1) address issues of inequity from a macrosystemic level, (2) explore the lived experiences of Latino communities in California as a regional example to gain deeper understanding of how an assets-based approach to design may create a social movement, and (3) present a framework and progressive recommendations to transform the design process towards equitable assets-based design.

## 2 Power Tensions

The individual indicators of Latino well-being are nested within domains of larger ecosystems that influence behaviors and outcomes (Figure 1). Existing environmental systems such as family, peers, and community often do not have direct impacts on the macrosystem level decision making. These macrosystems include school, workplace, healthcare systems and structural entities such as research institutions and the technology industry. The upwards mobility of Latinos has been held back by the gaps between the established environmental supports surrounding an individual and the macrosystems, which are exemplified by the vast inequities in the digital systems for this population. To better understand the lived experiences of Latino communities and identify how digital media may help use existing strengths to navigate challenges, we evaluated equity in three different power structures in the macrosystem: health, academia, and industry.



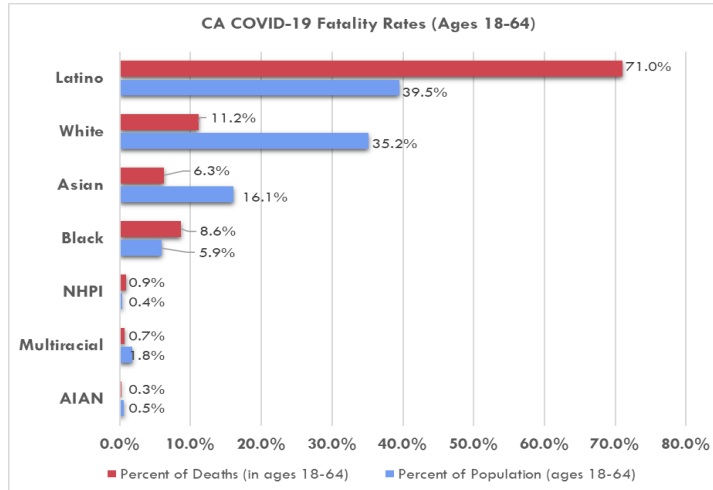
**Figure 1: Digital Social Determinants of Latino Health.** Adopted from the Bronfenbrenner systems approach, the nested domains within indicators of Latino health include that of family ties (proximal) and community ties (distal) which are key characteristics of many Latino experiences. The Systemic and Structural Domains remain distal yet vital in bridging the gap of understanding community assets for accessible design.

## 2.1 Inequity in Lived Experiences Related to Health

Health and information seeking behaviors typically begin at the earlier stages of human development, but we are increasingly shifting to dependence on mobile technology to promote health and well-being. Research has shown that marginalized groups, (e.g., Latinos) were found to have significantly lower rates of health care utilization for both primary and mental health care compared to their white counterparts [7,15]. These racial and ethnic disparities are often explained by lack of access and a mistrust of the health care system from an early age that persists into adulthood. More recently, Latinos are at higher risk for physical health issues such as obesity and asthma, and also higher rates of depressive symptoms and problematic alcohol consumption [10]. However, despite these increased risks, access and utilization of health care systems remains at alarmingly low rates [21]. A recent study shows that social capital for young people within Latino families has shown potential for resilience and improved health behaviors [20]. With the rapid ubiquity of mobile and social technologies, this social capital is further amplified with potential for greater positive outcomes. The opportunity to bridge the gap in health equity among Latinos exists with the power of technology, yet design considerations and accessibility have yet to meet the health needs of this community in the U.S.

Congruent to the existing health disparities, COVID-19 has become a terrible reminder and amplifier of these challenges. In many areas of the US, the Latino community is tragically and disproportionately affected by the pandemic (Figure 2). Tragic incidence and fatality outcomes unfortunately align with prior research that reveals the impacts of public health crises on communities who face such vast structural disadvantages—the devastating impacts of COVID-19 are expected to impact the Latino community in unprecedented ways [5]. The differences of this lived experience across social structures may further isolate Latinos from other individuals whose communities have not experienced such loss due to COVID-19. Design practices of future health technologies may help reduce future health inequities, such as culturally competent, equitable, and accessible digital solutions for testing and vaccine scheduling. As such, in any design effort, it is critical to not only understand the social contexts of lived experiences but to leverage the strengths that support Latinos through social and health challenges. Also, during the COVID-19 era, many Latino youth, and youth in general, are turning even more to their digital tools to cope with drastic changes to their everyday lives. However,

traditional research often does not take into consideration the contextual, developmental, and cultural considerations needed to design equitable online spaces. Digital technology in its ubiquity and a broader consideration for multidimensional health indicators (e.g., individual risk factors, family considerations, geographic community and access) may be a critical part of the solution to closing the gaps in these disparities.



**Figure 2: California COVID-19 Fatality Rates.** NHPI = Native Hawaiian/Pacific Islander; AIAN = American Indian/Alaskan Native. The number of fatalities among Latinos is vastly disproportionate to that of any other reported racial-ethnic subgroup according to the California Department of Public Health. The numbers reported are as of December 14, 2020.

## 2.2 Inequity in Academia

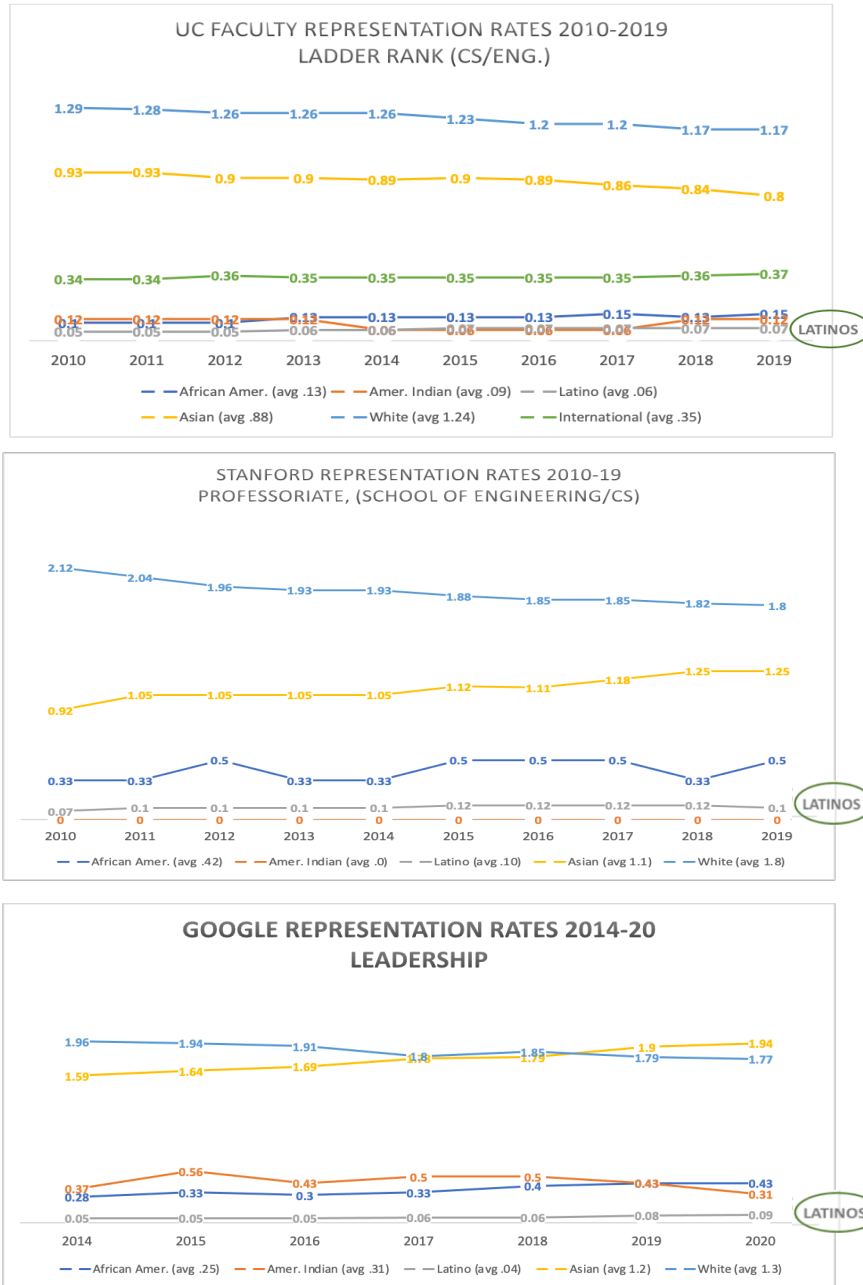
Much research is conducted on behalf of Latino communities in leading research universities. To better understand traditional academic structures, we evaluated the ethnic/racial diversity of ladder rank faculty in three top tier research universities in CA: The University of California, the University of Southern California, and Stanford University. Even though Latinos make up 39.5% of their state’s population, these three universities only average 4.3% Latino ladder rank faculty in all disciplines (Table 1) [24,27,28].

**Table 1: Ladder rank faculty workforce diversity in leading CA research universities**

University	Latino Ladder Rank Faculty (2019)
UC	5% (All fields)
Stanford	4% (All fields)
USC	4% (All fields)

We appreciate that the University of California and Stanford allow for evaluation of Latino faculty in all disciplines over multiple years. We evaluated the representation rates of ladder rank faculty in Computer Science & Engineering (CS/Eng) over a 9-10 year period. In the UC system, Latinos are consistently the lowest represented group in ladder rank faculty in all disciplines with an average representation rate of 10% for 2010-2019. For ladder rank faculty positions in CS/Eng the average Latino representation rate is even lower at 6% for the 10-year period, 2010-2019. Stanford’s representation rate of Latino ladder rank faculty in CS/Eng averages 10% which also places Latinos as the lowest represented group. While Stanford’s representation rate for Latinos is slightly higher than the University of California’s,

it is unclear whether Stanford's figure is based on domestic or international faculty. For additional comparison, we evaluated Latino leadership in a leading California-based tech industry leader that funds academic research and is branching into healthcare—Google. Google's leadership team averages a 4% Latino representation rate over 7 years [8]. (Figure 3).



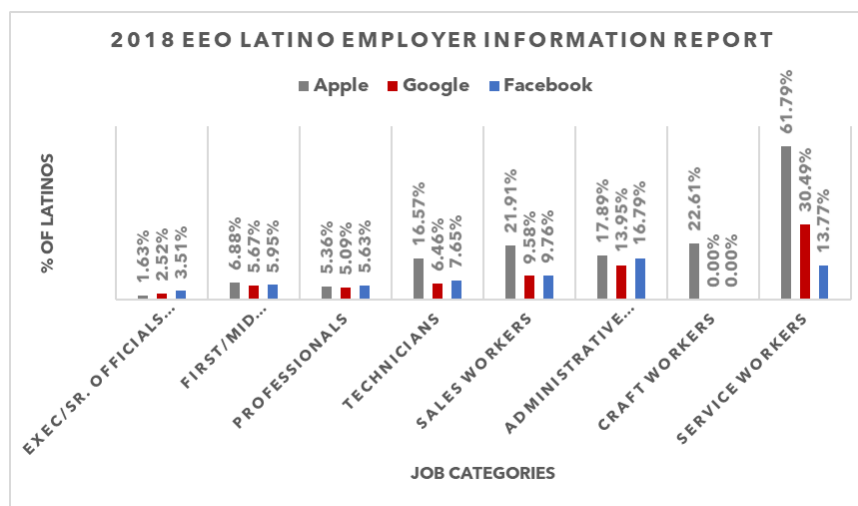
**Figure 3: An exemplar of Latino underrepresentation in academic and tech industry settings.**

Representation Rates = Group percentage of faculty divided by the same group's percentage of the state population. For example, if a group makes up 12% of the professoriate and 12% of the state of CA population, they would be at a "1" for full representation. [ $12\% \text{ divided by } 12\% = 1$ ] In UC 2019, Latinos were 3.1% of CS/Eng prof. but 39.5% of the state population [ $3.1\% \text{ divided by } 39.5\%$ ] for a 7% representation rate.

Without the representation of individuals from marginalized communities conducting or leading on academic research targeted at implementation and design of tools, it is increasingly difficult to integrate sociocultural nuances to digital spaces that are adaptive. This also stems from the lack of research study design and methodologies that incorporate the perspectives of individuals embedded in these communities--specifically Latino communities across the U.S., which poses the concern that digital equity may not be achieved if these are not considerations put into action.

## 2.3 Inequity in the Tech Industry

Additionally, much design work is conducted for Latino communities by powerful tech industry leaders. To better understand these for-profit business structures, we evaluated the ethnic/racial diversity of employees in three of the largest tech leaders headquartered in CA: Facebook, Google, and Apple. Even though Latinos make up 39.5% of the CA population, these three industry leaders average only 5.85% Latino employees [22]. At the time of writing this paper, data were not readily available to evaluate how many of these employees are located in CA or the diversity percentages of industry executives. Additionally, it is not clear if these percentages of Latino employees include cafeteria, maintenance, groundskeeping, etc. EEO-1 reports for Apple, Google (Alphabet), and Facebook are in the appendices.



**Figure 4: Latino employer representation in a major technology company. Latinos skew away from executive and technical level positions.**

An understanding of the broader scope of health inequities among Latinos comes from the multidimensional domains related to health outcomes during the digital age. The overwhelming lack of representation among industry and academic leadership leaves out the critical voices of Latinos to promote design fitted for the population. From sociological constructs to digital design, there are still prevalent color-blind ideologies that persist, which further the digital divide and silence the unique assets of marginalized groups. Current researched and designed digital ecosystems have adopted a color-blind approach (e.g., absence of user's race/ethnicity identification on social media, research driven by primarily White samples, methodologies that covary but do not account for the characteristics of racial-ethnic minorities) to race and ethnicity [9], thus missing the opportunity to use digital technology to support marginalized groups such as Latino communities.

### 3 Identifying Latino Strengths

We identified two of the many strengths and assets of Latino communities--resilience and familism. These assets are often found within more proximal systems to an individual and often overlooked in macrosystems affecting the Latino community.

**Note:** We use the more inclusive terms “Latinas” & “Latinos” versus “Hispanics” because they refer to people who are from Latin America regardless of language spoken. The term “Latinx” is not used in this paper as research has found that 97% of Latinos in the US do NOT use the term [13]. Assets-based design listens to the community’s voice and preference. A culturally appropriate alternative might be the term “Latine” as it can be pronounced in Spanish [4].

#### 3.1 Resilience

A strength often found in the narrative of Latino communities is Resilience—the ability to withstand adversity by activating coping mechanisms and leveraging assets and resources [14,23]. Concepts of resilience have public health origins in disaster preparedness, where community resilience is the community’s ability to withstand and recover from a disaster, such as a pandemic [6]. Findings suggest that resilience in Latino communities can be protective of psychosocial health by empowering individuals to better cope with challenges [26]. However, as increasing numbers of Latino youth are using digital media, an assets-based approach to design of digital media should seek to enhance and facilitate existing resilience as well as advance social change to dismantle power structures that marginalize their communities. Much work has been done on designing for resilience in areas and situations where change is beyond the control of the design community [12]. However, we see great potential for the design community to effect change and engage in a social movement as part of the design process. An assets-based approach to design should include a balanced approach where community resilience is valued but the design process attempts to address, “WHY is resilience needed in this community?” Can the design power structures (academia and industry) evaluate their own cultural competency and assets from the viewpoint of the community in order to effectively engage in the co-design process?

#### 3.2 Familism

Another critical and valuable component to the Latino youth culture and experience is Familism. The role of the family in a young Latino’s life can often shape strengths and resilience [25]. Within the strength in family bonds also comes challenges for youth (e.g., concern with more adult issues such as health and economic concerns) by which digital tools may help to support youth and their families. Many health-related topics and resources are also often avoided or underutilized by older members due to stigma and distrust in healthcare among Latinos [2]. While Latino communities are at higher risk for developing many mental and physical health-related issues, there is much hesitancy, due to historical and cultural narratives, that has caused distrust and avoidance of healthcare systems [17,29]. Young Latino use of digital media and their voices in the design process may empower them to share and provide support for themselves, their families, and their communities. There exists enormous potential for digital technology to strengthen this asset and transform the digital health experiences of Latino communities.

Resilience and familism are key examples of identified strengths in a community and how future design work may build on these strengths to identify strategies that will build a more equitable and shared future. In addition to recognizing strengths, we recommend that all design work also evaluate power structures that feed into challenges. Challenges faced by marginalized communities are not solely rooted in the community—**for communities to be marginalized, existing power structures create or maintain inequities.**

### 4 Taking an Assets-based Approach

The tragic outcomes of COVID-19 have disproportionately impacted marginalized communities around the world. We examine the effects of the pandemic on one of these communities (i.e., Latinos in CA; [Figure 2](#)) to highlight an inequitable lived experience and present how using an assets-based approach in future design work may help reduce future tragic outcomes. Our contribution to the field is twofold: (1) a unique perspective on the lived experiences of Latino communities, and (2) a framework for Assets-Based Inclusive Design (ABID) that may be applicable to many

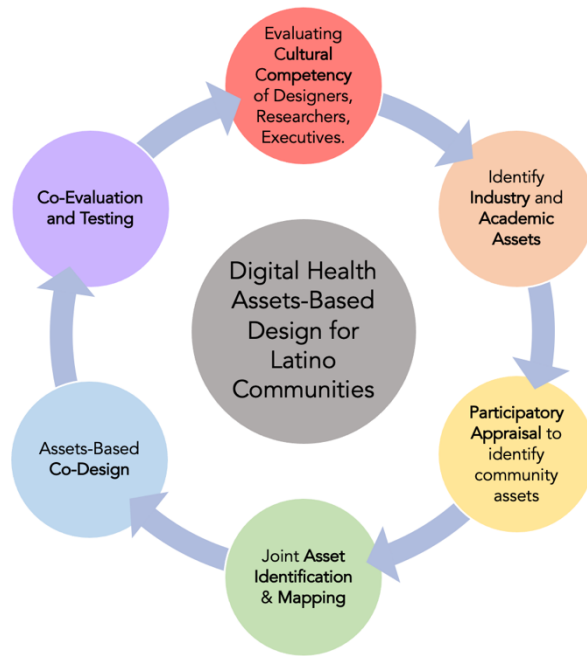


marginalized communities. The ABID framework presents a balanced approach where community resilience is valued but the design process attempts to address WHY marginalized communities need resilience. Additionally, the ABID framework outlines how the design community can identify and share its own assets in a two-way transfer of knowledge through the co-creation process.

Valuing lived experiences may challenge existing power structures and pervasive negative narratives often found in formal avenues (e.g., media, academic journals, news stories). However, we posit that valuing lived experiences is a significant part of co-design as a social movement. Part of this movement is creating novel roles for marginalized communities in the design process. As designers, we must move towards creating supportive conditions for participation and partnership in research and design processes, as well as reflective evaluation of our social and organizational cultures that create or perpetuate marginalization of certain communities.

## 4.1 Assets-Based Inclusive Design Framework

We leveraged an assets-based approach [30] with a Participatory Action Research [3] perspective to develop the ABID framework. (Figure 5) This framework presents a balanced approach where community resilience is valued but the design process includes a self-reflective look at organizational cultural competency. Additionally, the ABID framework outlines how the design community can identify and share its own assets in a two-way transfer of knowledge through the co-creation process. A first step towards an assets-based approach is to evaluate the cultural competency of designers, researchers, and executives. Power structures should be aware of their own organizational diversity in order to evaluate the cultural competency of their teams and leaders. After evaluating their cultural competency, power structures should identify the assets they will be sharing with marginalized communities. Ideally, identified assets will go beyond gift cards and minimal financial compensation. Once cultural competencies and assets have been identified, power structures can engage with communities in participatory appraisal and dialogue on community views of power structures. Participatory appraisal describes a family of approaches that enable communities to identify their own priorities and make their own decisions about future digital tools. Participants may identify questions such as, “How will the co-created digital tool be of benefit to us? How will we use it?” The organizing agency facilitates, listens, and learns. After participatory appraisal, power structures and communities can work together to evaluate and map out each other’s assets. Once assets have been mapped, stakeholders can embark on assets-based co-design to create relevant digital tools and services. Community participation in evaluation/testing is the last step in our ABID framework. If the co-created digital media/tools and practices do not meet expectations, the assets-based design process can begin again.



**Figure 5: Assets-Based Inclusive Design (ABID) Framework.**

## 5 Discussion

There are unique cultural, contextual, and design considerations to be made when designing technology and online spaces for marginalized communities. Historically, systemic barriers have prevented Latino representation from the groundwork of academic and industry research and design. Effects from these barriers have shaped isolating experiences of marginalization, as currently seen in CA’s pandemic experience. Healthcare is a human right and provides an example of an opportunity for academia and industry to bridge existing inequities and design digital tools that transform daily well-being and build on existing community strengths to survive health disasters such as COVID-19. Giving agency to Latinos to voice their narrative of strengths, challenges, and assets will provide opportunities in co-design processes to benefit the community and contribute to the social good. To address this large undertaking, we must utilize the assets-based approach to develop a digital health space in which Latino youth and their communities trust, utilize, and promote health information and resources. Additionally, we must evaluate the existing power dynamics of academic and technology organizations that are researching and designing future digital tools to support Latino communities. An assets-based approach to design includes reflection on the external power dynamics that impact a community’s lived experience.

## 6 Conclusion

This paper focuses on systemic inequities, resilience, and familism in the CA Latino community as a case scenario to propose the transformation of a traditional deficit-focused approach into an assets-based design approach. We propose an assets-based inclusive design approach to create a social movement that will build a more equitable and accessible digital health ecosystem for ALL groups. This is a call to action for designers to value and understand the lived experiences of marginalized communities before undertaking future design work for these communities. We also hope this is a call to action for industry and academia to evaluate the effects of ethnic and racial inequities in their power structures and their organizations. Industry and academic institutions highlighted in this paper are all based in California. Data on Latino

representation and COVID-19 lived experiences are relevant to all members of these organizations as they live, work, and establish corporate relationships in California where Latinos are the largest and most heavily marginalized population group. If we are to continue conducting ethical, human-centered work, we must work towards an inclusive future. Broader implications of an assets-based inclusive design approach have the potential to foster a social movement that dismantles existing inequitable research and organizational social systems and practices that create or maintain marginalization of communities.

## ACKNOWLEDGMENTS

The project described was supported by the National Center for Research Resources and the National Center for Advancing Translational Sciences, National Institutes of Health, through Grant [TL1 TR001415](#). The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH. We also acknowledge support from the National Science Foundation, National Robotics Initiative 2.0: Ubiquitous Collaborative Robots program (Award [#2024933](#)) and the William T. Grant Foundation ([#190017](#)). The content is solely the responsibility of the authors and does not necessarily represent the official views of the NSF nor William T. Grant Foundation.

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