

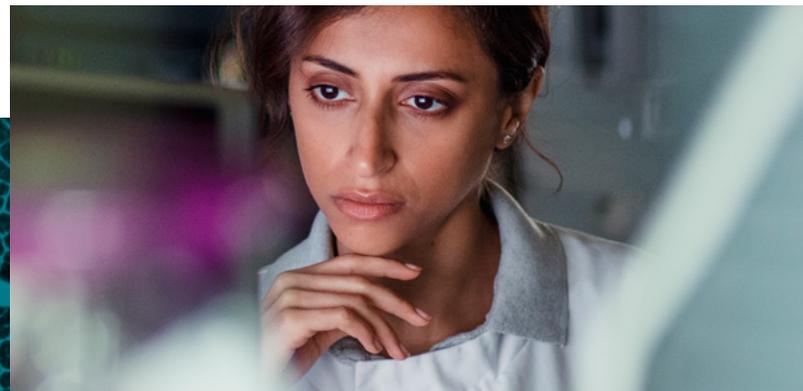


Collaboration of California Life Sciences & Sterling Bay

Playbook for Accelerating and Incubating Diverse Life Sciences Entrepreneurs

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Preface

Accelerators and incubators¹ play a key role in the startup ecosystem in the United States and globally. There are now thousands of various types, with affiliations among nongovernmental organizations and in the academic, private, and public sectors. Participation in an accelerator or incubator can positively alter a company's growth trajectory, and in many cases, it can mean the difference between success or failure. That consequential impact is particularly heightened in the life sciences industry² because of the cost, length, and risk of developing products and services. There are often increased requirements regarding scientific expertise (e.g., complex biology and chemistry), physical infrastructure (e.g., wet labs), and financial capital (frequently running into tens of millions of dollars for even small-scale development).

Accelerators, incubators, and venture capital firms have a crucial role to play in shaping the economy and the society of tomorrow because they decide which life sciences ideas receive funding and are thus more likely to reach fruition, so these institutions help shape what our healthcare and medicine will look like 10-20 years from now. And if accelerators and incubators play a crucial role for life sciences entrepreneurs generally, they can be particularly mission critical for women and underrepresented minorities (URMs). Thus, these institutions are the focus of this playbook. While the first part of the playbook sets the overall context of dynamics faced by women and URMs, most of the discussion to follow focuses on providing actionable suggestions for how accelerators and incubators can select, attract, retain, and successfully launch more life sciences companies led by diverse founders.

Diverse life sciences entrepreneurs often lack access to the resources of accelerators and incubators focused on the life sciences,

including the bioinformatics, biomedical, biotechnology, digital health, medical device, and pharmaceutical sectors. The purpose of this playbook is to provide guidance for accelerators and incubators—whether led by academic, governmental, industry, and/or nongovernmental organizations—in identifying, recruiting, selecting, retaining, and promoting life sciences startups led by diverse founders. It is also intended to increase the probability of success for those startups so that those founders and their supporters (e.g., employees, investors, suppliers) receive appropriate financial and nonfinancial rewards/returns. And of course, the ultimate goal is to make the best products and services available to patients and care providers, which requires maximizing the contributions of all talented entrepreneurs to the life sciences discovery, development, and deployment processes.

The following analysis and the accompanying recommendations are based on three key elements: (i) research on many existing academic and practitioner publications on diversity, equity, and inclusion challenges and opportunities for startups led by diverse founders, (ii) review of previously developed playbooks drawn from a variety of sectors, and (iii) in-depth interviews with over 50 diverse entrepreneurs and approximately 50 additional members of the life sciences ecosystem. The overriding goal from analyzing these three key sources was developing specific, forward-oriented, positive recommendations for how to improve the interface between life sciences accelerators/incubators and diverse life sciences founders.

¹In the playbook, we list "accelerators" and "incubators" in alphabetical order, but from a temporal perspective, entrepreneurs typically enter incubators at an earlier point in their development than accelerators.

²The life sciences industry includes many sectors, including biotechnology, genomics, digital health, medical device, pharmaceutical, and precision medicine. While this playbook encompasses all of these sectors, the challenges and opportunities it addresses are particularly profound in the case of drug discovery, development, and deployment.

1.0 Overview

The zip code a person is born into often strongly dictates their lifetime level of health and access to medical care. It has a similar impact on their probability of professional success 20, 30, 40, or 50 years down the road as a potential life sciences entrepreneur. Gender, race, sexual orientation, ability status, and other demographic/physical factors can also be highly determinative. The ultimate goal, with the help of the life sciences industry, accelerators, incubators, and other parts of the ecosystem, should be to level the playing field as much as feasible, given societal-structural constraints. Regardless of a person's demographic or socio-economic status, there should be parity in the opportunity to incubate, accelerate, and scale a biopharmaceutical company. Providing parity of opportunity is ultimately the best way to get the best talent working on developing the best drugs for patients.

Lack of parity can be costly. McKinsey & Company estimates that the Black-white wealth gap in the U.S. will cost the economy \$1 trillion to \$1.5 trillion per year by 2028; conversely, there is a \$290 billion opportunity to grow overall wealth by achieving funding and revenue parity between Black- and white-owned businesses.³ Moody's Analytics reports even higher costs for the gender gap.⁴ In the case of the life sciences sector, the consequences of these disparities are even more profound, as failure to fund the most deserving founders (i.e., those with the best science) can translate into not promoting the best medicines, meaning missed opportunities to ease suffering and save lives.

1.1 Background

The success of high-tech accelerators stimulated the creation of similar models in healthcare and the life sciences aiming to replicate those accomplishments. The fundamental job of managers of life sciences accelerators/incubators is to find exceptional opportunities to drive returns for the organization, its limited partners (LPs),⁵ and other stakeholders. Life sciences investment involves significant risk, with the need to commit capital to teams that have yet to produce a drug or device and may not for many years. Accelerators and incubators place big bets on people and their potential as leaders, visionaries, and builders of organizations. In some ways, while typically couched in highly financial and scientific terms, it is ultimately a deeply human, personal decision the accelerator/incubator and the LPs make. As programs and spaces for entrepreneurs seeking resources (e.g.,

business advising, access to capital, expanded networks), accelerators and incubators might be expected to see applicant pools with a larger representation of founders who traditionally lack this access (i.e., those led by women and minorities). Unfortunately, the participation rates for women and minority entrepreneurs in these life sciences accelerators and incubators remain relatively low.⁶

In order to solve our toughest medical and scientific challenges, we need to draw upon the broadest possible pool of human capital for research. We know being more diverse is good for business, good for providers, and, most importantly, good for patients. Research indicates that diverse groups are more effective at problem solving than homogeneous groups. Diversity is pro-innovation.⁷

1.2 Context

Many accelerators and incubators recognize that the lack of diversity is a key issue and are making attempts to address the issue. Their leaders are actively seeking effective strategies to increase the diversity of the biopharma entrepreneurs they support and the inclusivity of their own organizations. From our conversations with entrepreneurs and other key members of the life sciences ecosystem, these respondents generally view the attempts as well-intentioned but often lacking commitment and continuity.

Accelerators and incubators should be engines promoting a more inclusive life sciences sector. To build an inclusive organization, it takes well-planned and well-implemented actions on the part of accelerator and incubator leaders to recruit women and under-represented minority entrepreneurs. Diversity does not just happen. Organizational commitment to diversity, equity, and inclusion (DEI) is an indispensable but insufficient first step. To get women and URMs in the door and fully participating in programming, concrete actions are needed. As gateways to economic opportunity, accelerators and incubators should not just be average on DEI, they should ideally lead by example in setting the highest possible standards in providing parity of opportunity to all segments of our society.

Research indicates that, across a variety of sectors, ventures from accelerator programs grow at significantly higher rates compared to ventures that apply but are not accepted into accelerators.⁸ We know barriers for women and underrepresented groups exist most profoundly at the early stages of new venture creation, so they

³ <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/building-supportive-ecosystems-for-black-owned-us-businesses>

⁴ <https://www.moodyanalytics.com/-/media/article/2023/close-the-gender-gap-to-unlock-productivity-gains.pdf>

⁵ Limited partners are investors in the accelerators and incubators. Their capital is used as a primary source for investment in the startups.

⁶ <https://ininnovation.com/news/blog-post/driving-diversity-in-the-life-sciences-a-conversation-with-johnson--johnson-innovation>

⁷ <https://www.mckinsey.com/featured-insights/diversity-and-inclusion/diversity-wins-how-inclusion-matters>

⁸ <https://www.galidata.org/publications/accelerating-startups-in-emerging-markets/>

need access to accelerators and incubators more than non-diverse founders, all other factors being equal. Yet, when looking at the percentages of participants (i.e., those invited to join and who accept positions in accelerators and incubators), we know women and minorities are typically underrepresented, which is to say that "non-diverse" founders are typically overrepresented. If we assume that accelerators/incubators provide meaningful resources and improve the probability of success for early-stage companies, women- and minority-led companies who are not selected for participation fall further behind by comparison. In this way, many accelerators and incubators actually work—unintentionally and certainly without any malicious design—to increase disparities. Thus, these entities providing resources are rarely neutral. If they are not helping increase parity, they are probably accentuating disparities. This is all the more reason to get it right in terms of accelerators/incubators being drivers of diverse innovation.

2.0 Key Barriers

Next, we discuss the key barriers that diverse life sciences entrepreneurs encounter in relation to accelerators and incubators. The problem is complex because the barriers are cultural, economic, emotional, perceptual, and structural. Below, we examine eleven distinct but overlapping challenges.

2.1 Lack of Recruitment

Many accelerators and incubators have a *build it and they will come* philosophy, so they do not actively recruit any entrepreneurs, diverse or otherwise. Instead, they rely on word of mouth. This unintentionally works to the disadvantage of diverse life sciences entrepreneurs because their networks are often not as "dialed in" to these opportunities. For example, the typical traditional entrepreneur in the life sciences is likely to have access to a greater quality and quantity of information than a diverse entrepreneur. This dynamic is not unique to or caused by the life sciences sector. It is endemic to the United States. The challenge is that creating, operating, and scaling a life sciences company requires such a complex multi-fold of resources that these information disparities become particularly impinging. Thus, for example, the non-diverse entrepreneur's network may share two to four opportunities to become part of an accelerator/incubator, but the diverse entrepreneur's network may only share one or even none.

2.2 Skewed Recruitment

When accelerators and incubators do recruit, they often reach out to the "usual suspects." Thus, they might place notices with professors at top research level 1 universities, but these institutions often suffer their own diversity gap, particularly in terms of tenured and tenure-line faculty. Accelerators and incubators might ask previous participants, but if the prior cohorts were not diverse, this unintentionally builds in a cascading exclusion. If an organization has been commercially, financially, and scientifically successful with the companies previously recruited, it can become particularly challenging to acquire the motivation necessary for removing the skew.

2.3 Self-Exclusion

Many women and minorities consciously take themselves out of consideration from accelerators and incubators even in cases where, objectively, (i) the institution would provide a welcoming environment and (ii) the entrepreneur would be an excellent fit. Assigning some responsibility to the person self-selecting out may seem like blaming those who are victimized by unfairness. However, many diverse individuals think the entrepreneurial path is not for them and/or they will not find a welcoming environment. And of course, if one enters the investigatory process with that skepticism, it will be easy to find evidence that seems confirmatory. This self-exclusion dynamic is profound and challenging to overcome.

2.4 Imposter Syndrome

Related to self-exclusion but occurring even earlier in the entrepreneur's journey is the imposter syndrome. This has less to do with the diverse entrepreneur's perceptions/misperceptions regarding the accelerator/incubator and more to do with their own apprehensions and sense of self-worth. As one interviewee said, "Women have been told their entire career that they are not good enough for a position, so you have to show them they are." The same is true for minorities. If one is often told or made to feel that one is not qualified or otherwise worthy, that eventually begins to sink in.

2.5 Selection Process

Unfortunately, selection biases occur at each and every step of the selection process for accelerators and incubators: promotion,

awareness, applications, first-round callbacks, list of finalists, final investment decisions, offer, and acceptance. The foundational problem is the selection panels are typically not diverse. Thus, the process of picking candidates plays out like a self-fulfilling prophecy. Given the basic dynamics that have been set in place, we know an adverse outcome—a lack of diversity in those selected—is likely to result. The primary drivers are the deeply ingrained notions of what a successful life sciences entrepreneur looks like and what type of background is optimal for success. This in turn is driven by homophily: human beings tend to identify with and select human beings who look and act like themselves. It is an affinity bias and/or an unconscious bias. Thus, non-diverse accelerator/incubator selection committees are more likely to unconsciously select entrepreneurs similar to themselves.

2.6 Self-Fulfilling Economic Reality

Private life sciences accelerators' reputations are based on ventures graduating with large infusions of venture money, yet we know women and minority entrepreneurs are less likely to garner this capital. Thus, from a purely economic standpoint, there may be many cases where women and minority entrepreneurs are less attractive to accelerators/incubators because they will attract less capital. In that case, while the outcome is unfavorable, the selection process simply favors those most likely to achieve the accelerator's ultimate objectives. Of course, this can be a self-fulfilling prophecy fueling an endless cycle of disparate, unjust outcomes. The basic dynamic is: Women and minority firms are objectively less attractive candidates for accelerators/incubators because in reality they will attract less capital, but because they lack the access to the resources provided by accelerators and incubators, these diverse firms are less attractive to funding sources. It can be an unfortunate, vicious cycle.

2.7 Program Design

The program design for many accelerators/incubators is unconsciously geared toward the prototypical, traditional entrepreneur. How so? First, the often intensive in-person residency requirement favors those with fewer family obligations; on average, female entrepreneurs often have to balance greater family demands. Second, the external mentors and speakers often lack diversity. Third, while there are occasional activities and events focused specifically on diversity, these sometimes come to be seen as disassociated from mainstream

programming if they are not integrated into the curriculum. Fourth, there are often not enough programs designed specifically for those entrepreneurs, regardless of demographics, who want to make further improvements in areas such as creating pitch documents, giving oral presentations to prospective investors, and building networks among funding sources. Fifth, accelerators and incubators are often physically located in decidedly non-diverse areas, which can have an impact on the style, tone, and type of programming. Programs are often not tailored to suit the particular needs of women and minority entrepreneurs and their startups.



2.8 Pitch Process

The pitch deck and the oral presentation are an integral component of a startup's success—or failure. Yet the process can be biased. For example, we know that male entrepreneurs get 2/3 questions that are promotion-focused, and female entrepreneurs get 2/3 questions that are focused on their capability to avoid a problem or prevent a crisis. This helps contribute to disparities in funding. As one interview subject noted:

“ **Investors, regardless of their gender, ask female founders prevention-based questions and ask male founders promotion-based questions. Prevention-based questions are: how will you prevent Google from stealing your market share, and promotion questions are: how are you going to become the next billion-dollar unicorn? And so, advice I always give to female founders is, if you get asked a prevention-based question, answer it because you have to answer the question asked, and then answer the promotion-based question they didn't ask you.**”

Moreover, women have generally been socialized to be less comfortable with pitching and self-promotion, and in turn, the typical evaluator has been socialized to perceive women less favorably even given identical credentials, ideas, and presentations to comparable men. The same is often true for URMs presenting. For this and other reasons, the pitch process is frequently flawed as it concerns parity considerations.

2.9 Organizational Culture

Accelerators and incubators can be hyper-competitive, with an emphasis on performative behavior. At some level, this is functional and necessary. The chase for capital, collaborators, and customers, as well as patent protection, is often competitive, with only the most bold and proactive founders experiencing ultimate success. Also, the life of a leader of a biopharmaceutical, device, or digital health startup is a continuing parade of performances—for prospective co-founders, investors, employers, and customers. However, the unrelenting twin demands to compete and to perform can lead to a zero-sum culture, leaving less room for more collaborative, nurturing approaches. This becomes problematic because academic analyses and anecdotal evidence indicate that women and URM entrepreneurs usually—but

certainly not always—prefer community/team-oriented, cooperative environments over hyper-competitive environments.^{9,10}

2.10 Cultural Biases

Those not fitting the stereotypical image of a life sciences startup leader can often be subject to various cultural biases.¹¹ As one interviewee noted, "So I think point number one is awareness. We all have these biases, let's just make ourselves aware of them. The second thing is to overcome them, [but] you do not overcome bias with saying, 'Stop being biased.' It's really, really hard. It's like telling a right-handed person to be left-handed. What you do instead is build systems in place [to counteract bias]." Interestingly, while we often think of unconscious bias as negatively impacting women and racial minorities, similar dynamics play out internationally. As one article notes, "Entrepreneurs from emerging-market country contexts typically have the same or higher levels of education, work experience, and prior entrepreneurial experience as their high-income peers at the time of application. Yet investors *still* report a lack of commitment and entrepreneurial experience in these entrepreneurs, which they say makes it difficult to invest in some markets compared to others."¹² This disparity can occur even when a white American male is evaluating a white European male, which shows the enduring strength of homophily and the persistence of cultural biases.

2.11 Explicit Bias

In many cases, the barriers diverse entrepreneurs face are blatant racism and sexism of many varieties: cultural, normative, psychological, and structural. This unfortunately continues to take place in today's business environment. Our interviews with the startup life sciences entrepreneurs were replete with stories identifying "bad" actors treating them poorly seemingly because they were female or a minority. Racism, sexism, and other "isms" are unfortunately alive and well in a small but negatively impactful subset of participants at accelerators and incubators. Thus, these remain challenges to overcome.

3.0 Best Practice Recommendations

The processes and structures of interaction between accelerators/incubators and founders/startups are more like a spider web than a

⁹ <https://poole.ncsu.edu/thought-leadership/article/how-investors-can-better-support-women-and-people-of-color-owned-businesses/>

¹⁰ Fleisher, L. & Marquez, A. (2019). "A Seat at the Table: Special Considerations for Women and Underrepresented Groups in Academic Entrepreneurship." In *Academic Entrepreneurship for Medical and Health Sciences*. <https://doi.org/10.21428/b2e239dc.618b909b>

¹¹ <https://www.sieo.io/ratemyinvestor-report-2020>

¹² Roberts, P. & Kempner, R. (October 2, 2017). "Startup Accelerators Have Become More Popular in Emerging Markets—and They're Working." *Harvard Business Review*. <https://hbr.org/2017/10/startup-accelerators-have-become-more-popular-in-emerging-marketsand-theyre-working>

uniformly linear process. However, to provide structure to the discussion, we've divided the recommendations into six overlapping stages: (i) Recruitment, (ii) Selection, (iii) Building an Inclusive Culture, (iv) Programming, (v) In-Residency Success, and (vi) Post-Residency Success. At each stage, there is room for accelerators and incubators to be more effective as regards women and URM life sciences entrepreneurs.

3.1 Recruitment

1. Create more centralized vehicles for accessing the channels that are optimal for finding diverse entrepreneurs. Many accelerators and incubators based in California and elsewhere struggle to identify and then access the best communication channels for reaching diverse life sciences entrepreneurs, particularly those who are URM. This is an area ripe for collective action, where multiple accelerators and incubators join together to split the cost and the staff needed to make diverse entrepreneurs aware of opportunities to apply. In addition, we can tap into the accelerator/incubator itself for women and URM who can serve as the "face" of the organization, helping with recruitment and review.
2. Consider asking founders who have been rejected from accelerators and incubators (rather than those accepted) to refer other entrepreneurs from their networks. First, the previously rejected might successfully reapply. Second, they can share the opportunity with those in their networks.
3. Develop more co-incubation programs with institutions, organizations, and universities that have high percentages of diverse populations. For example, a traditional accelerator or incubator could partner with a historically Black college or university (HBCU), Hispanic-serving institution (HSI), African-based entity, Latin American-based entity, women's college, or women's professional association.
4. Consider doing more to promote women/URM-centric incubators. These entities have diversity built into their core DNA and mission/vision, almost always being female and/or minority led. They are financially, personally, and psychologically safe/supportive places to nourish life sciences entrepreneurs in their earliest stages, which is the period most fraught with challenges. After achieving success in this initial incubation platform, the startups could then move to "mainstream" accelerators. Fortunately, there are an increasing number of women and URM-centric incubators available for partnering and support.
5. Establish a "branch location" (either permanent or temporary) in more diverse areas to engage more entrepreneurs of color and literally take the acceleration/incubation programming to them. This can be done with kiosks and micro-incubation programs. This does not necessarily mean, for example, setting up a local accelerator in a highly disadvantaged neighborhood. As would be true of any economically disadvantaged neighborhood or region, one is unlikely to find many current or potential PhDs looking to commercialize their technology. However, this branch office approach can be meaningful in creating a physical presence at HBCUs, HSIs, or conferences with high percentages of minority scientists. Even in this increasingly virtual world, location and physical proximity do matter. Thus, for at least a subset of their activities, accelerators/incubators should think about ways to take the show on the road to access more women and minorities. And even in areas where there may be a paucity of prospective candidates, organizations can create micro-incubation programs and place kiosks in different neighborhoods. This will help to increase the accelerator's or incubator's visibility in underrepresented communities. If the entity stays in place literally and strategically, it will likely keep getting highly connected/networked *non*-diverse founders showing up on the doorstep.
6. Increase the quality and quantity of programs seeking to encourage entrepreneurship among Black, Brown, and female students, perhaps in collaboration with institutions of higher education. While there are a number of existing programs in this domain, few are oriented specifically for potential biopharma entrepreneurs. Rather than starting from "scratch," it would probably be more effective and efficient to "bolt on" or integrate life sciences entrepreneurship into proven programs currently run by colleges/universities and nonprofit organizations. And where necessary, entirely new initiatives could be created. Implicit in much of this playbook is an assumption that we have strong enough pools of women and URM life sciences entrepreneurs applying to join accelerators and incubators; the primary task then would be to level the playing field for the applicants and enhance the experience for the accepted. However, we should also pursue the dual track of continually working to make both the pipeline and the pool as robust as possible. The best starting point for encouraging diversity in life sciences entrepreneurship is to design programming for women and URM who are STEM undergraduate majors, graduate students (particularly PhDs), and postdoctoral researchers.



7. Develop more widespread programs to recruit diverse entrepreneurs who are working in large corporations and may not have seriously considered the startup route. The senior ranks of many biopharma companies are an untapped source of great leadership and entrepreneurship. As one interview subject noted, "You can't really start a life sciences company when you are at the prime of your life, with four kids and student loans. So, either do it before you get loaded or after you make some money." Also, women and minorities often feel a greater need to get experience and expertise before starting a company. When it comes to thinking about the pipeline of potential diverse entrepreneurs, we often think young: recently minted PhDs or postdocs. But we should also start thinking not-so-young: experienced executives from corporate America. To be sure, only a small subset is likely to be capable of making that pivot, but even a small percentage could deliver meaningful total numbers over time.
8. Tailor appeals to different audiences. Even among so-called "diverse" entrepreneurs, there is an enormous amount of diversity. It includes those of different ability status, ethnicity, gender, immigrant status, race, religion, sexual orientation, and veteran status. Thus, trying to access different women, minority, and other business communities requires approaches tailored, at least to some extent, to each.
9. Partner regularly with organizations that serve women and minority entrepreneurs, particularly the professional and scientific associations. They can be tremendous conduits to talent. In this

regard, we can increase partnering with global associations because high-potential women and URM life sciences founders are not limited to a particular city, region, or country.

3.2 Selection

1. Increase the diversity of those leading accelerators and incubators. The global life sciences sector has increasingly recognized that a key step to developing better DEI outcomes for certain metrics (e.g., diversity in clinical trials; culturally competent marketing of products to diverse customers) is to have diverse teams. Thus, the industry is taking active steps to diversify its workforce.¹³ For example, in 2020, Pharmaceutical Research and Manufacturers of America (PhRMA) published a comprehensive report on "The Biopharmaceutical Industry: Improving Diversity & Inclusion in the Workforce."¹⁴ The basic premise is that achieving diverse outcomes is considerably more difficult in the absence of diverse decision-making teams. This same logic should apply with full force to life sciences accelerators and incubators.
2. Increase the diversity of investment and selection committees. Similar to the logic in the above recommendation, one of the most effective ways to reduce biases (both conscious and unconscious) in vetting applicants is to have a considerably more diverse group of decision-makers/selectors. This does not always work, but it increases the probability of parity in assessment. This does not just mean a token person here and there. In

¹³ <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/big-pharma-sets-ambitious-diversity-goals-to-ensure-pipeline-of-talent-64442361>

¹⁴ <https://www.phrma.org/-/media/Project/PhRMA/PhRMA-Org/PhRMA-Org/PDF/S-U/TEconomyPhRMA-DI-ReportFinal.pdf>

fact, we might even overcompensate by having greater percentages of women and minorities on these selection and investment committees; that would be a useful correction to past practice.

3. Encourage consideration of a certain percentage of diverse entrepreneurs in the applicant pool. Several years back, the National Football League (NFL) implemented a procedure called the Rooney Rule, which required all NFL teams to interview URM for their head coach openings. The rule has had decidedly mixed success because, ultimately, those making the decisions (team owners and general managers) are not diverse. Thus, we need a two-fold approach. First, we should have at least an informal expectation that the pool of applicants contains a certain number of diverse entrepreneurs. Second, as noted above, we should have a formal expectation that the pool of selectors includes diverse individuals.
4. Implement blind review processes. Processing large numbers of applications fairly (i.e., being constantly mindful of explicit and implicit biases) can be difficult. As one interviewee noted, "No information about the entrepreneurs (such as name, age, gender, race, etc.) is included. This leads to a founder-blind, merit-based, initial screening based on 25 points of data versus a handful of judges/reviewers." Having a review process that hides the demographic identity of applications should become a standard operating procedure for at least the first round of vetting applicants to accelerators and incubators.
5. Streamline the application process for gaining admittance to an accelerator/incubator. A simpler process tends to benefit all candidates, but on average, diverse entrepreneurs are much more likely to be discouraged by a cumbersome, onerous process for applying.

3.3 Building an Inclusive Culture

1. Create an ombudsperson to handle complaints regarding racism, sexism, and other forms of discrimination. This should be a standard operating procedure for all accelerators and incubators. This could even be accompanied by an anonymous whistleblower line. Just having these resources in place will provide comfort to diverse entrepreneurs, and, when necessary, they can be used to identify and call out bad actors.
2. Do even more to highlight successful diverse entrepreneurs. First, these individuals, whether living or deceased, serve as exemplars

for those underrepresented founders currently struggling to achieve success. Second, and as importantly, these exemplars are great for sharing with non-diverse people as one way to enrich images and combat stereotypes of what a successful biopharma entrepreneur looks like. All accelerators and incubators should prominently share these images, which can help strengthen the culture of appreciation of differences.

3. As noted above, the composition of those working at accelerators and incubators should be more diverse. This should extend from the Board of Directors to the CEO/Executive Director to the main full-time staff to the interns. As one interviewee noted, "Practices in hiring and promotion need to be adjusted at incubators to break the cycle of lack of representation of women and minorities, particularly in leadership roles." Perhaps the best way to create a diverse organizational culture is to have diverse organizational leadership.
4. To build an inclusive culture, we have to create spaces that feel familiar and appear comfortable to diverse entrepreneurs. This definitely includes a physical component (e.g., type of artwork, color schemes, furniture style), and it also means emphasizing a more collaborative, nurturing ethos.
5. Hire an entrepreneur-in-residence (i.e., a "been there, done that" person) who focuses exclusively on finding, recruiting, selecting, educating, supporting, retaining, and accelerating diverse entrepreneurs. Every accelerator and incubator should have one or more person in that type of role, and it can be done very cost-effectively.

3.4 Programming

1. Remove the zero-sum mentality of diverse entrepreneurs versus non-diverse entrepreneurs. Pro-diversity programming should not lapse into anti-non-diverse entrepreneurs. As much as possible, non-diverse entrepreneurs should be incorporated into initiatives designed primarily for diverse entrepreneurs. This will build a more holistic culture within a given accelerator and incubator instead of an "us" versus "them" mentality. The weaker the sense of "otherness" and the stronger the overall sense of community, the more comfortable women and minority entrepreneurs—and everyone—will be. As part of this, we should encourage more collaboration between diverse and non-diverse entrepreneurs. One cannot force or even effectively cajole these relationships into existence. The better—but more

indirect—approach is to create norms of collaboration and networking opportunities that intentionally cut across demographic categories such as gender, race, and ethnicity within a given accelerator or incubator.

2. Demystify the startup process. We should continually endeavor to make the startup process less mysterious. How? The approach should be multi-fold. It should be pursued in academia, within startups, through business advisors, and certainly by accelerators/incubators. Opacity is likely to work to the particular disadvantage of diverse prospective applicants, whereas education, learning, and transparency about the journey as a life sciences startup are likely to be the great levelers of the playing field.
3. Include more diverse life sciences mentors, speakers, and trainers, which will help accelerators and incubators recruit and retain more women and minority entrepreneurs. All things being equal, prospective entrepreneurs are more likely to take the "startup leap" and persist if they see and interact with others "like them" who have succeeded.
4. Create even more virtual residencies. Being flexible and being virtual are generally going to be pro-diversity because they allow for significant pool expansion. The wet lab nature of many biopharma companies precludes this, but it should be utilized when possible. In many ways, this would map onto how the biotechnology and pharmaceutical industries are evolving with more virtual activities and roles. The phrase *virtual residency* seems oxymoronic, but post-Covid-19 developments in culture, HR, and technology have substantially increased the ability to create meaningful communities of distributed colleagues.
5. Integrate diversity and inclusion across the curriculum and programming agenda much like business schools do with ethics. DEI should become embedded in the DNA of accelerators and incubators.
6. To maintain consistency in capacity-building activities, there can be value in developing and standardizing women/URM-centered curricula across accelerators, incubators, and other entrepreneurship support organizations. If learning can be completed in cohort form, the impact can be enhanced as the founders automatically gain a built-in support network. Topics can include branding, customer discovery, financial management, fundraising, go-to-market strategy, legal issues, marketing/sales, media training, negotiations, product design, public speaking/pitching, and team building.
7. Hold public events that open the facility for community use; this can help life sciences accelerators and incubators cultivate a reputation for inclusiveness. Moreover, there should be a regular cycle of programming (rather than one-off) focused specifically on issues directly relevant to more women and minority biopharma entrepreneurs. This kind of programming can be done for relatively low cost while delivering a great impact in terms of brand building, community outreach, and networking with diverse prospects.
8. Facilitate peer-to-peer organizational learning among incubators and accelerators. While significant collaborations and other positive interactions occur now, more can be done regarding collective action. The issue of increasing entrepreneur diversity is ripe for collective action by accelerators and incubators.

3.5 In-Residency Success

1. Accelerators and incubators should consider lengthening the time period for their program and otherwise including more temporal flexibility. Many organizations already do this, and it is something more entities should consider. This flexibility will benefit everyone, but it will likely disproportionately help women and minority entrepreneurs.
2. Encourage all-male co-founding teams to add female executives to deepen the bench and pool of potential female CEOs/founders. One challenging dynamic is not just the failure to have representative levels of female-owned and -led startups. There is also the frequent arrangement of co-founding teams with few or no



women. Yet we know that many CEOs of startups were co-founders or at least high-level executives in previous startups, including many that went through accelerators and incubators. More diverse employees in startups helps translate into a larger pool of candidates to create their own companies down the road.

3. Help diverse entrepreneurs create robust teams. As one interviewee noted, "No one person can give you all the types of support you need. It is important to have a diversified team. You need people to give you moral, financial, scientific, and other kinds of support. At a given point, someone can be a welcome supporter, but also a stressor, so it is essential to have someone else to go to. And when times get hard, this support system will be vital." Building a team of co-founders and then "regular" employees is crucial to the success of any life sciences startup, but on average, women and minorities have access to less robust pools of talent than non-diverse entrepreneurs. Thus, anything an accelerator or incubator can do to help diverse entrepreneurs build stronger teams would substantially increase the probability of eventual success (e.g., developing an FDA-approved drug).
4. Develop micro-incubation and pre-incubation programs for diverse innovators who are not quite ready to take full advantage of a robust incubator and who want more time to improve their business fundamentals.
5. Consider having all startups who join accelerators and incubators sign a diversity pledge. This can be done in a way that is not heavy handed. These could be created as aspirational goals and a general commitment to pursue inclusive hiring practices.
6. Develop a special report primarily featuring highly successful (e.g., those who took a life sciences company public and/or to a successful exit) diverse entrepreneurs talking about specific best practices. Most well-known and widely read playbooks for startups are based on interviews with non-diverse entrepreneurs. That is indicative of the—likely unintentional—bias playbooks often display. A playbook where women, minorities, and other nondominant entrepreneurs shared their secrets of success could be enormously valuable and inspirational to diverse founders and enlightening to others.
7. Provide more mental health resources. Being a successful life

sciences entrepreneur requires determination, focus, intensity, patience, resourcefulness, and risk tolerance. The life of an entrepreneur is often a life of rejection. There are many doubters who enjoy telling entrepreneurs how implausible their idea is. Because building a life sciences company requires more energy, money, and time than startups in any other sectors, the potential for "critique" is particularly great. These critics never go away, so founders need to develop psychological toughness.

8. Accelerators/incubators should consider making mental health resources available to everyone. For example, many Black founders do not put their own picture on their company's website because they know that would dissuade some people from becoming customers. Consider the mental anguish of (i) knowing that your very skin color can serve to limit success of this entity you are working so hard to build, and (ii) instead of proudly proclaiming your ownership publicly, you have to essentially hide that fact. As one female entrepreneur noted, "It is important to have *severe optimism* and keep nourishing support from the 'gatekeepers of power,' even if they are critical." Doing that takes significant mental strength and can impose a psychological toll over time.

3.6 Post-Residency Success

1. Forgo heavy equity requirements if alternative financial arrangements can be created. Many accelerators require at least 5%-10% equity, and VCs will often take about 20% in the first round of funding. If a founder is keen to avoid dilution, an accelerator/incubator may not be the most optimal route. This becomes particularly problematic because women and minority entrepreneurs typically receive lower valuations for their companies relative to non-diverse founders with near identical metrics on performance and potential. Also, because of historical patterns of exploitation, entrepreneurs of color may be more likely to view demands for significant equity suspiciously. All other things being equal, this could suppress interest in accelerators.
2. There are copious resources out there for women and minority entrepreneurs. We need to do a considerably better job aggregating those resources and making them freely, publicly available on the internet or in the cloud.¹⁵ It would be helpful if a diverse entrepreneur could go to a central online location and search for

¹⁵ For a great exemplar resource list, see *California Life Sciences*, 2023, "Start Up Resource Guide: Providing startups with access to resources to foster their innovation."

those resources (i.e., a one-stop virtual shop). Once this portal for women and URM startups is created, there should be continued curation of the lists, including adding a Web 2.0 (e.g., user-generated content) and Web 3.0 (e.g., greater decentralization, with users owning content and increased trust using blockchain) elements.

3. Help plan for the post-incubator/post-accelerator period. Getting more diverse entrepreneurs into accelerators/incubators is a key goal, but biases in the VC ecosystem can still present seemingly insurmountable hurdles to overcome. Thus, we need follow-up to make sure "graduates" continue to excel. From a game-theoretic approach, if diverse entrepreneurs believe (correctly or incorrectly) that they will experience a lower return on the energy and time spent participating in an accelerator or incubator program, they will be less likely to join in the first instance. Thus, in addition to the pre-accelerator/pre-incubator programs mentioned earlier, organizations should consider adopting post-accelerator/post-incubator programs to aid the transition and maximize the probability of success for diverse entrepreneurs.
4. Partnering with larger biotechnology and pharmaceutical companies is a key challenge many women and URM life sciences entrepreneurs face. At various stages in the development of these startup companies, it would be advantageous to partner with big biopharmaceutical companies along various dimensions of the value chain, including discovery, development, manufacturing, licensing, marketing, and sales.¹⁶ The basic synergistic elements of a successful collaboration are there: (i) small startups brimming with ideas but short on capital and (ii) large established life sciences companies perhaps facing shortfalls in their product/services pipeline (i.e., scarcity of ideas) but brimming with capital.¹⁷ Accelerators and incubators could focus on helping women and minority entrepreneurs understand the power of these partnerships and even facilitating connections.
5. Leverage supplier diversity programs at large life sciences companies to benefit women and URM life sciences startups. Supplier diversity is rising to prominence in many corporate agendas, and there is increased recognition that robustly inclusive procurement initiatives can make supply chains more

resilient.¹⁸ A supplier diversity program can drive sustainable long-term value for both large life sciences companies and startup vendors led by women and minority founders. Implementation can be challenging and require several steps, including gaining buy-in from leadership, overcoming unconscious biases, and completing WBE (women business enterprise) and minority business enterprise (MBE) certification requirements. The bureaucratic requirements can sometimes prove daunting for startups, but there is even a prior challenge of increasing access to information and knowledge of available opportunities. Accelerators and incubators can help on both fronts: (i) making entrepreneurs aware of opportunities and (ii) helping them successfully attain vendor contracts. This potential and actualized supplier-related revenue stream—large life sciences companies as customers—could sometimes make the difference between persistence/success and discouragement/failure of startups.

6. Build post-program bridges to angel investors, family offices, venture capitalists, and other sources of equity-based capital for startups. Diverse entrepreneurs tend to have less access to capital.¹⁹ Accelerators and incubators generally do an excellent job exposing participants to sources of capital during the programs. Like most participants, the challenge for women and URM life sciences entrepreneurs is maintaining those relationships with early-stage investors once the program has concluded. Accelerators and incubators should consider taking tangible steps (e.g., create post-program entrepreneur-investor mentoring dyads; hold periodic networking events featuring program alums and early-stage investors) to try and increase the continuity of those relationships.

4.0 Potential Key Next Steps

Going forward, the keys will be action and implementation—making it actually happen. There are at least three key next steps with this playbook. First, it would be optimal to have the community read through the recommended best practices to (i) determine which are the most efficacious, (ii) contribute new recommendations, (iii) conduct prioritization exercises, and (iv) consider how to optimize implementation. Second, there should be events and other programming

¹⁶ <https://endpts.com/sp/biotech-and-big-pharma-a-blueprint-for-a-successful-partnership/>

¹⁷ https://www.ey.com/en_gl/life-sciences/partnerships-in-life-sciences-dealmaking-strategies

¹⁸ <https://businessfacilities.com/2021/10/california-supplier-diversity-spurs-equity-driven-development/>

¹⁹ Hwang, V., Marion, E., Desai, S. & Baird, R. (2019). "Access to Capital for Entrepreneurs: Removing Barriers." Ewing Marion Kauffman Foundation. https://www.kauffman.org/-/media/kauffman_org/entrepreneurship-landing-page/capital-access/capitalreport_042519.pdf

(e.g., focus groups, roundtables, symposia, workshops) to transcend the static document; the playbook should be a catalyst to help build community and promote networking. Third, the work should continue on the two lists: (i) one for sources of capital and (ii) one for a variety of other resources, including accounting, legal, and technical assistance. As part of this, it would be useful to secure grant funding from industry to continue building out the resource lists, including development of Web 2.0 and Web 3.0 elements. By taking these three simple but tangible steps, the playbook can help serve as a catalyst for continuing conversations, community building, and resource aggregation.

In addition, as another eventual step, there is a pressing need to collect disaggregated data on the gender, racial, and ethnic dimensions of founders and funding in the biopharmaceutical startup ecosystem. Data on life sciences startup diversity (e.g., CEO, founders, board of directors, executive team, and capital sources) is currently collected in an inconsistent manner, when at all. As a consequence, many of the estimates for the life sciences sector are based on educated guesses that are largely derivative of other sectors such as technology or sector-agnostic aggregate data. Having diversity-specific and sector-specific data would allow us to make more informed business and policy decisions.



5.0 Conclusion

There is an unmistakable hunger for actionable strategies to build an entrepreneurial support ecosystem for diverse life sciences entrepreneurs. If they are offered proximate parity and treatment, diverse life sciences founders can be dedicated, resilient drivers who deliver discoveries and products for their teams, their investors, and, most importantly, for patients, families, and communities. We should call this effort a *growth and prosperity agenda*, as well as a moral imperative, and not a charity agenda. We want to build an open and inclusive community of founders from all backgrounds. In doing this, we have to be authentic and intentional.

A successful life sciences startup requires a great product/service, a talented team, a smart strategy, ample funding, and superb execution. One foundational point is that, to be successful, a life sciences company must have a great discovery that addresses one or more key applications. Founders have to build drugs that the markets want, providers will prescribe, patients will take, and insurers will pay for. To accomplish this, a strong team is needed. The strength of the founding team is crucial, as are the other employees as it grows and hopefully enters later stages. Accelerators and incubators have a proven track record of helping startup life sciences companies develop compelling discoveries, build talented teams, and perform well on strategy and execution. It is imperative that diverse entrepreneurs have equal access to this opportunity. This playbook represents an actionable, tangible step towards that lofty, pro-patient goal.

About California Life Sciences

California Life Sciences (CLS) is the state's most influential and impactful life sciences membership organization, advocating for the sector and its diverse innovation pipeline. For more than 30 years, CLS has served the community by supporting companies of all sizes, from early-stage innovators and startups to established industry leaders in the fields of biotechnology, pharmaceuticals, and medical technology. As integral components of a healthy and collaborative ecosystem, CLS also works closely with universities, academic and research institutions, the investment community, and other critical partners that promote this vibrant sector. With offices in South San Francisco, San Diego, Sacramento, Los Angeles, and Washington, DC, CLS works to shape public policy, improve access to breakthrough technologies, educate lawmakers, and advance equity within our ecosystem by championing innovative solutions for some of the most pressing challenges of our times. In doing so, CLS fulfills its mission to protect and nurture California's life sciences industry, empowering discoveries that lead to healthier lives around the world.

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