

Recruiting for Resilience: C-Suite Leaders in the Life Sciences Share Lessons Learned

Helen Mary Meldrum, Bentley University, USA

ABSTRACT

Bringing a safe and effective pharmaceutical product or medical device to market requires an astonishing amount of time and money. This research features interviews with the chief executive officers (CEOs), chief scientific officers (CSOs), and chief medical officers (CMOs) of many of the most successful life science firms in the USA with the goal of capturing their thoughts on the recruitment of new hires. The executives screened candidates for emotional commitment as an essential quality to complete the long process of bench science, regulatory clearance, and product positioning in the market. They sought to hire experienced team members who thought of setbacks as problems to be solved on the way to providing life-altering options for patients. These C-suite leaders needed to create a productive workplace culture, enhanced by a diverse group of professionals with a variety of experiences and temperaments. Participants noted that shared vision and resilience played a greater role in predicting performance than any particular skillset discernible from a resume.

KEYWORDS

Failures, Key Hires, Life Science Leaders, Recruiting, Resilience

INTRODUCTION

Creating a new medical product in the USA is a laborious, expensive venture with a highly unfavorable likelihood of success. For example, if a new medication advances to clinical trials, there is a 90% chance of its not being approved by the Food and Drug Association (Papapetropoulos and Szabo, 2018). Products that do obtain sanction have been in development for about a decade. The cost of advancing to product approval is increasing, with some studies indicating the bioscience industry will have to spend an average of \$16 billion per new product by the year 2043 (Seyhan and Carini, 2019). Likewise, medical marketing has expanded to an almost \$30 billion annual expenditure for prescription drugs, disease awareness, health services, and laboratory tests (Schwartz and Woloshin, 2019).

The life science industries are anomalous. No other business affects whether people might live or die, or how quickly they can recover from an illness or injury. Because no other trade is under such intense pressure to innovate expeditiously, an understanding of the unique employment needs is necessary. Many life science leaders have a professional degree in the sciences. It is common to see PhDs and MDs as corporate officers (Bauer and Cohen, 2012). Yet success in this high-risk, high-reward industry requires a rare mix of business acumen, technical expertise, and an interpersonal style that will mesh with the company's culture. New recruits must work within the goals, resources, and schedules of experimental science methodology. Additionally, the importance of excellent teamwork

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to the success of innovation is well documented (Hoegl and Gemuenden, 2001). Decisions about talent recruitment are an essential part of overall organizational strategy (Hatun and Preve, 2015).

Enlisting new employees is a vital part of spurring commercial success for biotech and pharmaceutical companies. The past forty years have established recruitment as a tool for improving aspects of organizational operations such as selection, onboarding, creating effective cultures, and job performance (Yu and Cable, 2014). However, the research on recruitment can also be characterized as too narrowly focused on a small segment of the labor market (new university graduates) and scholars continue to study attitudes more frequently than actual behaviors (Rynes, *et al.*, 2014). These foci leave a gap in the recruitment literature in terms of addressing organizational-level outcomes. Further, strategic recruitment differs from traditional viewpoints by highlighting the assets found in the collective, individual and team characteristics that must be leveraged for effective project execution (Ployhart, *et al.*, 2014). The extant recruitment research has not fully explored many of the factors that might accelerate sustained competitive advantage (Phillips and Gully, 2015).

Augmenting the literature on recruiting, human capital resources theory proposes that business performance is enhanced when organizations attract, select, and retain the most talented professionals who can align with company's mission and objectives (Ployhart and Moliterno, 2011). Scholarship on human capital focuses on the aggregate value of individually contributed skill sets. Organizational cultures consisting of individuals with diverse experiences and backgrounds have proven beneficial in knowledge-intensive businesses (Jøranli, 2018). Meta-analyses regarding the value of human capital have concluded that organizations must acquire the best and the brightest employees to boost their chances of profitability (Crook, *et al.*, 2011).

The term "high potential" employee in the human resources literature describes recruits who have particularly rare and sought-after skills. Companies must compete for these individuals because they frequently have multiple employment choices. Research that could assist in the identification of high potential employees is still underdeveloped (Dries, *et al.*, 2012). Obviously, it is not feasible to fill all positions in an organization with A+ level performers. However, the focus of C-Suite leaders may be on recruiting high-potential employees to operate in essential roles (Collings and Mellahi, 2009). The pharmaceutical biotech industry relies heavily on skilled and experienced human capital for its key functions, so it is important to fill leadership positions with high potentials as a matter of urgency before venture funding runs dry. With the demand for these professionals outstripping supply, competition is fierce (Posthumus, *et al.*, 2019). Therefore, effective recruitment is key to the development and maintenance of a company's competitive advantage. Not surprisingly, research has found that CEOs are increasingly involved in the talent management process, with some spending up to 50% of their time on related issues, including recruiting (Economist Intelligence Unit, 2006).

The often-cited article, "The people make the place" (Schneider, 1987), noted that companies develop cultures reflective of their employee's collective qualities, which then form the foundation for the way the organization looks and feels, both to insiders and outsiders. This perspective dictates that when candidates for employment think they will fit in, they join up. And when leaders think people will fit in, they recruit them. Early studies focused on how the companies could find people who possessed superior skill sets. Later research incorporated applicant reactions to different recruiting and selection strategies. It was expected that the C-suite leaders who speak through this study would also recognize the importance of both viewpoints (Ployhart, *et al.*, 2017).

This research explored how life science leaders thought about their human capital. What was the mixture of attributes, experience, inventiveness, energy, knowledge, and enthusiasm that they wanted to capture for their organizations (Luthans and Youssef, 2004)? The bioscience industry is populated by people with a vast range of training, including scientists, engineers, former government officials, MBA grads, etcetera. C-Suite leaders are directly involved in decisions about hiring their senior personnel and they know they must go beyond reviewing lists of accomplishments and ascertain if their potential recruits can boost team performance to meet established quality, budget, and timeline objectives. One of the most influential management theorists of the past forty years has stated that

any company serious about capturing profits will ensure that they recruit the right people by putting applicants through rigorous selection procedures (Pfeffer, 1998).

In life science organizations, where vast sums of money are made and developments in medicine sweep across the globe, decisions on new hires affect not only the well-being of the company in the present, but also the potential future development of the organization. A better understanding of the hiring practices of elite leaders can provide valuable insights. Since C-suite leaders set the direction from the top, this exploratory inquiry focused on how they go about recruiting key talent. How did they screen new employees to determine if they had the requisite drive and resilience to recover from the inevitable, disappointing project failures endemic to the industry? In addition to echoing some of the enduring issues raised by research in human resources, commentary on their recruiting processes will be illuminated by concepts from positive psychology and organizational dynamics. The present research focuses on the psychological qualities biopharma leaders look for in onboarding professionals who will become consequential players in the company's viability.

METHODOLOGY

Chief Executive Officers (CEOs), Chief Scientific Officers (CSOs), and Chief Medical Officers (CMOs) of some of the leading life science organizations in the United States were interviewed. Given the huge costs and likelihood of product failure, the participants addressed how they decided to recruit employees whom they believed would persist through the long process and recover from setbacks. The interview excerpts here were part of a larger inquiry (a project entitled: *Forward from Failures: Profiles of Psychological Perseverance in Life Science Leaders*).

Interviewees were BioCentury 100 ranked company leaders (as indexed in 2015). Market capitalization is the basis for the BioCentury list of the top 100 U.S. life science organizations (BioCentury, 2015). Top performers for 2015 as ranked by Forbes, Inc. were also sought as respondents. A total of 250 CEOs, CSOs, and CMOs were targeted. Public data indicated that several of these executives received annual compensation in the tens of millions of dollars.

Methods to recruit participants included postal letters, which led to four interviewees. No one responded to an appeal on the online platform LinkedIn. Networking through professional life science membership groups did not lead to participants, but communicating informally through acquaintances of C-Suite staff led to six participants. Three C-Suite executives accepted personal invitations given by attending their public presentations. Most of the participants were secured through unpublished direct email addresses, which were surmised by substituting the executive's name into the email address format of a publicly accessible, lower-level employee, as found in online sources. Given the busy schedules of these leaders, gaining agreement for this research study was challenging, but ultimately 45 agreed to be interviewed. Telephone appointment confirmations were e-mailed, listing the benefits of participation; describing privacy safeguards; promising that the participants could review the transcript for accuracy and editing; and dispelling any fears that the result might create negative publicity.

A telephone interview was obtained detailed information regarding personal feelings, perceptions, and opinions about recruiting key personnel. By recording each participants' actual words, the "why" behind their beliefs was revealed. Focus groups would have been impossible to conduct with the elite respondents already being overcommitted. Also, it was desirable that they were not influenced by others in a group format. Typical written survey data collection was not chosen because participants might not feel encouraged to provide elaborate and candid answers. In this case 'Yes' or 'No' or interval rating answer options would have been too limiting.

The general public agrees to telephone interviews less than 10% of the time in the USA (Leeper, 2019). These elite C-Suite level executives had particular reasons to avoid telephone interviews. Besides the obvious time pressures, they were concerned with the unintentional revelation of sensitive information. For these reasons, this group has proven difficult to recruit for research (Bednar

and Westphal, 2006). That this study achieved completed interviews with almost 20% of possible interviewees was an impressive result.

Appropriate sample sizes for this qualitative study were within recommended norms as described by Guest, *et al.*, (2006). They suggest having at least 12 subjects to facilitate pattern emergence and saturation of viewpoints. The interview format was flexible, allowing the leaders to think thoroughly about the issues and discuss any related subtopics for whatever length of time they chose. Sixteen of the 45 interviewees chose to speak about employee recruitment.

Bentley University's Institutional Review Board (IRB) approved and documented the research plan and subject protections for safeguarding data. The telephone interviews took from 45 minutes to two hours. Digital recordings were converted to audio files and transcribed. Scheduling interviews took many hours over several months throughout 2015-2016. Being guaranteed final approval of their transcripts was necessary for the cooperation of the interviewees. To this end, participants were sent transcripts for review and to sign off on the University IRB consent document. There was follow-up to determine the accuracy of terms such as chemical formulas or names of liquidated companies.

A flexible interview guide was informed by the literature review. Interviews were conducted in a conversational manner, following the participants' interests. The interviewer has training and decades of experience in both counseling psychology and in teaching listening skills. Possible questions on career issues, resilience, and effective employee recruitment resulted from preparation by the principal investigator.

Traditional demographic data were not collected, because all participants were public figures whose biographical information and photos were available online. Most had advanced graduate degrees and decades of relevant experience leading to their present status. Over the months the interviews were done, many participants were featured in mass media such as television and the *Wall Street Journal*. Two-thirds worked at corporate headquarters in Massachusetts and California. These are the major centers of US life science corporate clusters (Philippidis, 2018). Eighty-five percent of interviewees were male, closely echoing the 20% representation of women in life sciences corporate leadership nationally (Marcaurelle, 2018).

Analysis of the transcripts first examined manifest content, and later latent content using Braun and Clarke's (2006) Thematic Analysis Method. Briefly, the six steps of this method are: familiarization with the data, generating preliminary codes (coding is defined as identifying text excerpts that are linked by a common idea), using the codes to look for emerging themes, reviewing the themes, naming and defining the themes and subthemes, and reporting the data with illustrative quotes for each theme. The goal of thematic analysis was to find meaning without contaminating the data with preconceived ideas. It was an appropriate technique to bring out previously unstudied ideas regarding recruiting in life sciences.

After reading the transcripts, initial codes were assigned. Passages were collapsed into potential themes. Themes were reviewed to determine if a different configuration of the data could demonstrate further meaning. Quotations defined and supported the themes. For example, the theme of recruitment of purposeful and passionate candidates was represented by the quotes such as, "*you want people who are going to be jazzed coming in to work every day and realize that they're doing something meaningful...*" and [candidates] "*have to be aligned with a purpose that's greater than your salary, and title...*" Although thematic analysis can seem sequential, the stages form a more accurate portrayal of the data with increasing iterations in a recursive process. Multiple checks assured the accuracy of the raw data and resultant descriptions.

Although interrater-reliability was not calculated, colleagues working in life sciences informally assisted in seeing data patterns and assuring the internal validity. The author takes final responsibility for the results for an unusual additional reason. She promised her elite participants that only she would handle their data, assuring a covenantal relationship with them.

As an adjunct to the analysis, an NVivo word query was run to tabulate the most frequently occurring words in the interview excerpts. The results came back with a logistically predictable word

count pattern clustered on the top three most frequent: people, think and hire. Thus, use of qualitative data analysis computer software programs was not helpful in discovering salient themes. Furthermore, the author's prior experience with NVivo in a large, mixed-methods study reinforced a practice of staying close to the data and the nuances available through manual analysis instead of software coding (Simon, *et al.*, 2018). Computer programs cannot yet recognize connotative significance in narrative subtexts, layered meanings, and in-group references. Widely implemented software programs are less valid than human comprehension of the semantic subtleties of language.

In addition, because the sample of the elites was limited, it did not make sense to cross-tabulate by any demographic designations. Further, due to the small sample, a visual format of the condensed interview quotes would not constitute a meaningful exhibit.

RESULTS

Looking for Purpose and Passion

One of the first themes to emerge was that these leaders rejected candidates seeking a mammoth salary. A deep emotional commitment to the mission of providing options for patients was essential for staying the course through the long process of regulatory approval. C-suite leaders needed people willing to work superhuman hours out of a sense of vocational calling, not just because it is an alluring job.

People who are here for title and money ... prestige, stature. They run. They run for the next opportunity when trouble happens. I actually look for alignment to purpose.... To be in biotech and survive the failures, you have to be aligned with a purpose that's greater than your salary, and title. You don't have that, you won't be able to hold out. (CEO, Ultragenyx Pharmaceuticals)

This CEO alluded to the fact that commitment to core values is essential. The odds dictate that there will be many disappointments to navigate, therefore resilience—the ability to use positive mental skills to remain psychologically steady when faced with challenges—has gained significant interest amongst organizational psychologists who study responses to workplace stress (Shatté, *et al.*, 2017).

Related research by Duckworth (2016) noted that the quality she called “grit” is the drive that supplies perseverance and passion to stay on task over time. Zeal can be contagious, and applicants also need to feel as though the potential position is pivotal for their own personal and organizational success (Jordan, *et al.*, 2019). It was noted that real gusto is essential for endurance toward a positive outcome.

I like type A personalities. I don't like somebody that's wishy-washy and undetermined. Most people have seen failures even in their basic research. They understand that doing science is not easy... (COO, Editas Medicine)

These leaders screened candidates for temperament, which may include ambition, drive, and an obsession with their work. Professionals who are both extremely talented and gritty may be rare, but clearly desirable, because they stay the course in the face of disappointments. Grit is a motivational mechanism of potential star employees who are willing to work toward a valued goal over many years, even decades, without giving up (Duckworth, 2016).

I hire people that I like. That strike me as energetic that I think will challenge me. Basically, you want people who are going to be jazzed coming in to work every day and realize that they're doing something meaningful. And if it's just a job, it's harder to stay motivated, I think. There are a lot of perfectly qualified people that don't have whatever that little spark or energy that surrounds them. (CSO, ImmunoGen)

A vocational calling is a sense of meaning as a primary source of motivation (Dik and Duffy, 2009). This conception of work echoes the essence of this CSO's remark focusing on self-direction. Professionals who view their career as a calling report greater happiness and more satisfaction from their work. Employees with this philosophy can be a mixed blessing for a company, because while they will always be passionate about their endeavors, it may not translate to the specific workplace (Elangovan, *et al.*, 2010). These comments also seem to parallel Csikszentmihalyi's (2003) noted research on psychological flow at work, which features feelings of total immersion and intrinsic reward.

...How do we adapt our hiring...so we reduce the risk of having to do a big ninety degree turn and risk not being able to keep the teams? I think it is a mix of energy and passion, combined with humility... business awareness and self-awareness. That is a thing that is tricky a lot of time, because people, if they have been successful, they try to start drinking their own Kool-Aid, so that's not very good. (CEO, Moderna Therapeutics)

Seeking the behavioral flexibility to move onto the next project after the inevitable failure may seem like a contradiction with the prior quotes about perseverance. However, the comment implied that an all-consuming identity with project success will cause problems. It is interesting that the phrase used by this CEO referenced "drinking the Kool-Aid," which referred to a misguided followership dynamic at its worst. The saying was coined after guru Jim Jones led the members of his cult to commit mass suicide by drinking poison in the late 1970s (Gritz, 2011). The idiom describes people who follow ideologies blindly, with misguided dedication to a cause. Professionals who are overly-engaged with their work may miscalculate the benefits associated with a particular course of action, while under-estimating the risks involved. The willingness to persist in the face of setbacks may be an advantage that fosters greater success, or it can be a disadvantage that manifests as short-sighted arrogance when cancelling a project would be a more rational choice.

This CEO did not want to hire someone with a habit of reckless devotion to doomed projects. But like all the leaders, he still wanted someone with the impressive track-record of a star hire. Stars bring with them the potential of their future discoveries and ability to boost the credibility of an organization. Talents from successful companies are hired with hopes that they will replicate or surpass their past triumphs. Also, in a knowledge-intensive industry like the life sciences, star hires possess instant access to explicit and implicit knowledge residing with colleagues in their global community of peers. They can tap their extended networks to obtain important information (Wymbs, 2012). This hiring method can work well if the cultural fit between the company and candidate is optimal. However, stars know that their reputations, not organizational affiliations, are the only things that can guarantee them a job in the end.

Experience is Essential

Stars and lesser-lauded professionals make up a life science company's intellectual human capital (Hess and Rothaermel, 2010). The C-suite leaders knew they must look past the resumes' listings. The executives sought qualities like a drive, originality in problem solving, and willingness to tolerate frustration.

I'm interested in finding people who have been around the block and can handle the setbacks in a way that allows them to apply the learning and move forward onto the next program. (CMO, Relypsa Inc.)

This CMO spoke about a type of resilience wherein professionals think of themselves as better off than they were before the trauma of a project failure. Resilience can be cultivated as a habit learned through experience (Murthy, 2014). Individuals who persevere build up their optimism and have a "habit of interpreting setbacks as temporary, local and changeable" (Seligman, 2011, p. 102).

Duckworth (2016) argued that the aforementioned desirable quality of grittiness can increase through repetition and practice. Demonstrating grit may also require being a good self-regulator (Jordan, *et al.*, 2019). Evidence suggests that raw talent plus grit are essential to outstanding accomplishment (Duckworth, *et al.*, 2007).

How do they do under stress? How do they do when they are faced with challenges and I've promoted people internally based on how I've seen them deal with challenging situations. Did they lose their cool? Did they cause everyone else to get anxious or do they stay centered and really focused on problem solving... (CMO Receptos)

Bioscience organizations need employees who can adapt to change. Project failures are learning opportunities for those with coping skills (Shepherd and Cardon, 2009). These leaders did not see recruits fresh off a project failure as damaged goods, but rather quite the opposite. A worst-case scenario would be someone who presented as having expertise, but had not in fact achieved the prerequisite resilience by struggling through setbacks.

...I have a hiring bias in general, which is to hire people out of companies that have had great experiences. I say great experiences; it doesn't always have to be a positive experience... what matters to me is that we find great, talented people that have seen great companies become built, and/or have done great experiments as a company. Which might have failed, but in the course of that great experiment, there's a lot of learning. (CEO, Alnylam Pharmaceuticals)

Experiential learning was highly valued.

...we had a list of pretty much everybody we wanted to hire and all of those people had jobs and they were just waiting for us to give them the word that we had the money, that we'd raised the capital, and they would resign their positions and start with us immediately...The people who were prepared to wear multiple hats in a small startup setting where they could do multiple functions and self-motivate and be really good human beings. (CSO, Receptos)

Star recruits may also accelerate innovation by suggesting potential alliances and helping to facilitate the knowledge sharing process amongst colleagues (Hess and Rothaermel, 2011).

Pushing for Performance Indicators

Employment recruitment interviews are more valid when they are structured rather than improvised. Determining in advance what questions to ask and thinking through how to evaluate responses is essential (Klehe and Latham, 2006). In contrast, job candidates prefer unstructured interviews, perhaps because they seem less threatening (Van der Zee, *et al.*, 2002). However, judgements made in the past are a good indicator of how decisions will likely be made in similar situations in the future (Balas-Timar, *et al.*, 2016). So, screening candidates by asking for specifics on past behavior such as "Give me an example of ..."; "Describe a situation where ..." is desirable. Clearly, some of the leaders subscribed to this philosophy.

If I'm hiring for a more senior person...I will say, "Can you tell me about a time when you had to demonstrate resilience". What was the situation? ...And what would you do today differently if you were in that situation? (CSO, Epizime)

Rather than saying, 'What's your greatest accomplishment?' I say, 'What's the most important thing that you've done?' If they don't answer it with a failure story, which often times they don't, because I think anybody that's actually gotten a drug all the way through, often times that's the most exhilarating

moment, but then I always ask about the time when something didn't work. It's really key and critical in the interview process to have people think about handling the inevitable failure. How they think about it and approach it is a really important part of hiring people. (CEO, Syros Pharmaceuticals)

The real-time cognitive demands placed on respondents to these types of questions likely mitigate the possibility of them only giving desirable responses (Klehe and Latham, 2006).

...when they were in a situation that failed, how did they deal with it? This is key to understanding. I think the personality assessment is a really important part of what we do... It is all about the people and certainly their capabilities but also how they behave and the culture in which they work is also important. I think there is a pretty big literature on emotional intelligence. ...I've asked so many people to talk about a reason for failure in the job, and their story is all about other people failing them. (CEO, Biogen)

These types of questions assessed motivational factors and revealed if there was self-awareness. It would be a red flag if a candidate attributed a rejection from the FDA to all of his or her team members being ineffectual. Providing an explanation for the cause of a failure has been described as psychological "sensemaking." This CEO listened for patterns of attributions in the sensemaking process. Self-serving biases are common. They protect self-esteem by taking credit for success while denying responsibility for failure by attributing it to external factors (Ucbasaran, *et al.*, 2013). Self-serving attributions can result in learning little from failure and clearly, the CEO quoted above wanted to avoid candidates prone to this type of thinking.

Diversity of Thinking Means More Effective Teamwork

These leaders recognized that it was time to recruit more diverse professionals into the life sciences workforce. Longstanding barriers and unconscious biases based on gender, race, age, ethnicity, and sexual orientation needed to be reduced. The executives sought hires who differed in experiential background and intellectual temperament. The practice of recruiting for diversity helps decrease the problem of groupthink, corrects for systemic biases, and spurs creativity. The most effective decisions are those that synthesize information from many perspectives and these leaders knew the value of combining different personalities to solve problems. Diverse teams are more effective than homogenous groups because they have been shown to focus more carefully on information and are more innovative (Rock and Grant, 2016).

...the danger is if you hire people in your own image. (CMO, Intercept Pharmaceuticals)

This leader was blunt about his concerns regarding not hiring too many employees who bear a resemblance to himself. He was a well-educated, white, male physician living in an urban area. There is a lack of diversity in the physician-scientist pipeline (Salata, *et al.*, 2018). Diversity-focused efforts of funding agencies like National Institutes of Health attempt to increase science degree completion for underrepresented groups. However, attrition from biomedical research career paths disproportionately affects females and underrepresented groups (Valantine, *et al.*, 2016). While this CMO's aspiration to hire managers that were more diverse was wise, it may not always be possible, as qualified candidates are sparse.

Diversity, I think, is really what I look for...A mixture of people, I think, is really critical in an organization. If everybody thinks the same, looks the same, has the same ideas, you're going to miss something.... When you hire... really thinking of diversity as well. Everybody thinking the same is not a good idea. (CSO, Exact Sciences)

Increasing the stockpile of varied knowledge and skill sets is correlated with organizational prosperity. A beneficial mixture of professionals is the greatest potential asset for success. Educational differences in content area strengths can boost creativity in teamwork. Knowledge disparity can also make a difference because there is evidence that each team member's information sharing process is proportionate to his or her status in the team. Problematic knowledge disparity occurs when the team has only one recognized expert, and the rest are seen as novices. Those with more expertise often dominate the discussion, while members with lower expert status tend to withdraw. Critical process is discouraged if too many people in the room silence themselves, and problems emerge if the pros and cons of a research project are not thoroughly discussed (Han, *et al.*, 2014).

...you want a mix, you want a diversity of personality types.... spend a lot of time looking for that cultural fit. (CMO, Receptos)

It helps to have a team where you have people of different personalities and outlooks and backgrounds to really balance those things, because any individual is likely to give up too early on the right thing or continue slogging away at the wrong thing. (CSO, Acorda Therapeutics)

Team members should be less diversified in their mental models about how to work well as a group. Effective leaders know that they need to encourage the development of shared norms and encourage members to openly discuss the components of effective teamwork (Han, *et al.*, 2014). This is important because a lack of cordial relations is perceived as a social threat. Teammates will spend too much energy thinking about the presence of incivility in their midst. Individuals lose precious time evaluating conflicts, which can lead impaired performance (Porath, *et al.*, 2015). This can be especially problematic when a team needs to make a decision to proceed or to cut losses on a research program. Then teams need to approach top management as a unified front and present a report that says, for reasons a, b, and c, the project will not be viable.

While some of the leader's commentary spoke to the value of diverse voices in the discovery process, there were no specific remarks about aggressive recruitment of professionals from underrepresented groups. Career pathways are strongly related to dimensions of inequality, such as wages, autonomy, and risk of temporary unemployment. Potential employees from better known universities and apprenticeships are predominantly from more privileged backgrounds. None of the leaders spontaneously discussed efforts they had undertaken to reduce their own implicit biases and yet it is established that life science applicants from non-privileged backgrounds may be less able to present an equivalent record of prior experiences and educational credentials (Moore, *et al.*, 2016). From viewing their pictures and credentials in publicly available bios, the majority of respondents in this inquiry replicated the traditional image of a scientist-manager as an upper-middle-class, high-attaining Caucasian appearing male. When hiring for elite industries, there is an inclination for recruiters to choose people who are culturally similar to themselves (Rivera, 2012). Being able to observe more diverse role models at the top of the industry might help underrepresented candidates to develop confidence for career progression in the life science sector.

DISCUSSION

All that we do is always successful if you pick the right team. (CEO, Halozyme)

The most damaging impact on the decisions I made was picking the wrong people, the wrong person to do an important job. (CEO, Moderna)

These leaders sought recruits with the passion to persevere and a well-developed ability to delay gratification (Mischel, *et al.*, 2006). Onboarding an employee who is not well suited for the company culture is costly in terms of time and money, dimmed morale and productivity. As Schneider (1987)

noted, potential employees are drawn to organizations that share their values; so they too will be seeking a goodness of fit. A key difference between unsatisfied and satisfied employees is if they view their work as a job to make money, or a true calling.

As the interviews revealed, the leaders want people who have the know-how to contribute directly to organizational performance. The leaders valued grittiness (Duckworth, 2016). They needed to hire professionals ready to play a central role in the translation of ideas into world-class products.

Recruiting employees is a serious issue in talent management and is crucial for organizational sustainability (Hatum and Preve, 2015). Star hires benefit their organizations not only by their own performance, but also through positive relationships with their colleagues. Thus, the desire mentioned by one CSO to make sure his picks were “*really good human beings*” likely acknowledged that the presence of stars with highly collaborative strengths also improves the productivity of their colleagues (Kehoe and Tzabbar, 2015).

Consistent with the management literature advocating vigorous screening (Pfeffer, 1998), these leaders pushed potential recruits for indications of how they would perform if hired. If a potential employee either lacked the personal agency or could not create a viable exit strategy, then the accumulated scientific work would be a total loss. Therefore, these executives looked for candidates with the emotional intelligence to help their teammates maintain a realistic hopefulness, rather than psychological distance from negative outcomes.

As mentioned above, diversity of thinking creates teamwork that is more effective (Jøranli, 2018). However, in spite of modest gains over the past four decades, the US has not substantially improved the representation of minorities in the science education pipelines (Asai, and Bauerle, 2016). Diversified human capital within teams can also facilitate creativity through valuable knowledge variety (Han, *et al.*, 2014). These leaders embodied the idiom: “the whole is greater than the sum of its parts,” and believed in surrounding themselves with talented individuals who sometimes held diverging views on their work.

CONCLUSION AND IMPLICATIONS

Four takeaway messages emerged in the interview data. First, the executives look for alignment with vocational direction as a force to push forward in stressful times. Second, they want to recruit people with a range of both failure and success experiences as a background for stepping into any type of product development scenario. Third, some mentioned that their own skills at interviewing must be honed to enable them to select professionals who will persist under adverse conditions. Last, they need diversity in their teams as a way to safeguard against problematic group mentality decision-making.

Even after years of development efforts and concomitant costs, a successful product launch cannot be guaranteed. The rates of success in drug discovery (even more so than medical products) remain low because frequent failure is amplified by the presence of stringent regulations. These idiosyncrasies combine to make the development of medical products more challenging than any other technology-intensive industry (Petrova, 2014). The linchpin for a successful venture comes from the leadership and by extension, the teams they create. Recruits that are truly stars produce not only for themselves, but also help their colleagues and have a positive effect on overall organizational performance (Grigoriou and Rothaermel, 2014). Consistent with prior research (Ployhart, *et al.*, 2014), the leaders indicated a proclivity for strategic recruitment, knowing that it offers a performance advantage.

None of these elite leaders discussed letting their Human Resource departments have input by giving candidates personality assessments. They retained a “hands on” approach, knowing that they needed new recruits ready to onboard and channel their efforts toward the attainment of common goals. The executives initiated the talent development process by evaluating the strengths and weaknesses of their potential employees in relation to performance. Each of the participants had a mental map of strategies to identify, attract and hire talented individuals. They also recognized that the many new recruits value the opportunity to stretch, grow and thrive in their new environment. There was a

recognition that developing divergent talents and skill sets is essential to the health of the company, as is ensuring an expanded range of diversity.

This exploratory research points to the need to hire people who can provide not only a strong set of technical skills, but human relationship savvy as well. These leaders sought the quality of resilience to counteract the negative effects of the daunting odds (Shatté, *et al.*, 2017). The C-suite executives did not pursue scientific expertise at the expense of interpersonal skills. By conducting interviews designed to assess more than knowledge alone, they favored recruits capable of making an intellectual contribution, but also having the emotional fortitude required by the industry.

An implication of this study is that bioscience executives acquire their talent in a very deliberate manner. They know that a mis-hire can poison company culture, diminish the productivity of other employees, and alter the human capital. A new employee who is essentially “wired when hired” is ideal (Brymer, *et al.*, 2014). The leaders felt more confident about professionals who could articulate how they had handled adversity in the past and how they were likely to manage it going forward. They also wanted recruits who appreciated that diverse groups almost always outperform brilliant lone star employees. An analytic mindset is a valuable asset, but it can be a liability if it stands in the way of trusting and engaging with others on a team. The ability to adapt is the single most important requirement to successful employment in life sciences. The executives needed recruits who fully acknowledged that contemporary innovation has become more challenging because the easy treatment agents and products have already been discovered.

These leaders appreciate that diverse backgrounds and a range of personalities interacting on a daily basis improve teamwork. They recognize that too much homogeneity has potential costs, such as groupthink and organizational inertia (McLaughlin, 2015). These insights could lead to follow-on empirical research as the industry moves toward addressing the lack of minority representation (Huggett, 2018).

There was a tacit acknowledgement that the C-Suite needs to attend to their companies’ reputations within the industry as highly skilled talent is likely to communicate with colleagues in other companies. The participants’ remarks reflected the now classic research from 25 years ago regarding the value of a favorable corporate reputation (Fombrun, & Van Riel, 1997). This cautionary advice is magnified in an era of social media with many websites promising an inside look at workplace culture. Crowdsourced information about organizational life is provided by professionals anonymously posting to sites, like Glassdoor, Twitter, and LinkedIn. Although these platforms were not mentioned explicitly, they must be part of these leaders’ thinking when they consider how to stay competitive in attracting the best and the brightest.

This paper did not attempt an exhaustive review of research relevant to the recruitment of high potentials or what constitutes the ideal mixture of human capital. And yet the commentary from the C-suite leaders echoed some of those issues. The focus remained on listening to life science leaders as an open exploration of their thinking about personnel selection. Linking recruitment practices to tactical planning and culture building provides a new complement to the existing body of human resources selection research. This inquiry was undertaken to fulfill curiosity and generate understanding of C-suite leaders’ expectations, perceptions, and actions regarding recruitment practices and thereby sets a foundation for further ideation and theory building.

LIMITATIONS AND FUTURE RESEARCH

Constraints on this research must be noted. The difficulty in obtaining respondents resulted in a small sample size. The need to reassure this elite group of data safeguards was unusual. There was an unfortunate, but unavoidable, delay in reporting the results of the interviews. Since then, some of the respondents have had changes in their employment status, and updated interviews have not been possible. Nonetheless, because of the essential wisdom that was shared, there is tremendously beneficial face validity.

The interviews captured qualitative data, making some measures of reliability inapplicable. Conducting the interviews, the author relied on her experiential background and prioritized rapport and spontaneity over an inflexible plan of questions. This led to not every respondent discussing their experiences with recruiting new employees. All of the interviewees were willing to enter into a conversation for a research project exploring feelings about failure in the life science process. Perhaps those that were more concerned about exposing weaknesses declined an interview. Also, the fact that the researcher-interviewer has decades of experience and expertise in probing verbal content may have helped to minimize this tendency.

The interviews relied on the respondents' ability to accurately recall details about circumstances of recruitments that may have happened decades earlier. Verbal digressions and lack of exact standardization across the interviews may have weakened the overall consensus, making it more difficult to make population-level generalizations. Also, since there was no opportunity for participant observation as a check on validity, there was always the possibility of 'socially accepted answering' being reflected in responses that are thought by the participants to be desirable. This phenomenon manifests itself more often in people of higher social status, such as senior executives who are aware of the danger of saying 'the wrong things' on the record. Most C-Suite leaders are adept at handling interviewers and determining what use candid information might be put to. It bears repeating that all people share the human tendency to present themselves in a favorable way rather than give bluntly unvarnished, authentic answers. But it has been noted that even "strategic answering" by itself is important information since it is evidence of mainstream thinking within the industry. (Diefenbach, 2009).

Studies should be conducted that examine the ways in which leaders become more effective at making key hires. There will always be a need to recruit team members with a deeply ingrained vision that inspires fierce emotional investment. How can executives know with more certainty who will help them create a culture of learning and enthusiasm for the company's goals? One avenue for future inquiry involves gaining a broader understanding of the required human capital assets. Future studies could address how to ferret out candidates that offer the ideal mix of soft and hard skill sets. More research is needed on the calculations companies make regarding the ongoing "psychological re-contracting" to retain star employees. It seems necessary to better understand the many organizational and relational factors that encourage not just the recruitment but also the retention of professionals who have the grit to deliver on projects while also supporting the vision and values that can improve peoples' lives through new therapies and medical products.

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APPENDIX

This is a list of the interviewees from my longer study, Forward from Failures: Profiles of Psychological Perseverance in Life Science Leaders.

Participants-positions held at the time of the interview or directly after a transition.

Chief Executive Officers

George Scangos, Biogen
Jack Lief, Arena Pharma
Francious Nada, NPS
Michael Kaufman, Karyopharm
Helen Torley, Halozyme
Herve Hoppenot, Incyte
Stanley Crooke, Ionis
Mike Bonney, Cubist
John Maraganore, Alnylam Pharmaceuticals
Ron Cohen, Acorda
Kevin Conroy, Exact Sciences
Prabhavathi Fernandes, Cempra
Faheen Hasnian, Receptos
Clay Seigal, Seattle Genetics
Josh Boger, Vertex
Nick Leschly, Bluebird Bio
Jerry Zeldis, Celgene Global Health
Emil Kakkis, Ultragenix
David Schenkein, Agios
Stéphane Bancel, Moderna
Harvey Berger, Ariad
Nancy Simonian, Syros Pharmaceuticals

Chief Medical Officers

Paul Chew, Sanofi
Pamela P. Palmer, AcelRX Pharmaceuticals
David Oldach, Cempra
Ashkay Vaishnav, Alnylam Pharmaceuticals
Jonathan Drachman, Seattle Genetics
Elliot Ehrich, Alkermes
David Shapiro, Intercept Pharmaceuticals
Sheila Gujrathi, Receptos
Lance Berman, Relypsa
Peter Ho, Epizyme
Brett Haumann, Theravance Biopharma
Gary Patou, Pacira Pharmaceuticals
Tal Zaks, Moderna
Anna Berkenblit, ImmunoGen

Chief Scientific Officers

Bob Stein, Agenus
Graham Lidgard, Exact Sciences
Steve Gilman, Cubist
Werner Kroll, Quidel
Robert Peach, Receptos
Rich Gregory, ImmunoGen
Bob Copeland, Epizyme
Andy Blight, Acorda Therapeutic
Sandra Glucksmann, COO, Editas Medicine
Michael Collasius, Senior VP Qiagen