

# Investing in biotechnology management

Venture Capital  
and Hiring Insights  
on Gender



Knowledge at the heart  
of leadership

Analysis of gender  
diversity in biotechnology  
executive leadership across  
European and US markets



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## About Liftstream

Liftstream is an executive search recruitment practice focused exclusively on the global life sciences sector. Our clients benefit from the advanced sector knowledge we possess and the exceptional people we're able to recruit for them into positions of leadership.

Since 2003, Liftstream has been recruiting outstanding people to the unique and complex challenges of life sciences and who have contributed to innovative new treatments improving global health. Our client partnerships always focus on strengthening our clients' teams. We achieve this through comprehensive searches and rigorous candidate assessments to identify and appoint the person most suited to our clients.

Liftstream is committed to equal opportunities, diversity and inclusion. For more information about Liftstream, please visit [www.liftstream.com](http://www.liftstream.com)



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# 1.0 Introduction

The research in this report is an analysis of the biotechnology sector, with specific focus towards venture financing of private biotechnology companies in the U.S. and European markets, as well as hiring trends of executive and board appointments within this sector. The research specifically looks at the gender representation of the companies evaluated to examine whether the sector is investing in women leaders or appointing women to board and executive posts.

The research analyses 110 biotechnology investment deals, driven largely by venture capital and corporate venture capital investors. Further to this analysis of venture financing, the research looks at 308 executive and board appointments across the U.S. and European companies.

## 1.1 Motivations behind this research

When *'Diversifying the Outlook – The X&Y of Biotechnology Leadership'* was published by Liftstream in October 2014, we identified some incredibly valuable data which showed that only 1 in 10 board directors in biotech are women. We also showed that over 50% of European and US biotechnology companies have all-male boards. This study, the most comprehensive undertaken on diversity in biotechnology, revealed an industry which was strongly dominated by men, including that of the venture capital world upon which the biotech sector is so highly dependent.

For this *'Diversifying the Outlook'* study we chose to examine companies between 10 and 1000 employees, deciding that 10 employees for a biotech was a suitable surrogate to determine a level of organisational maturity where executive and board diversity might be more observable. However, following the publication of the research we received a number of questions, such as: *Was the picture improving with new company formations? Also, how many of the companies researched were perceived to be growing or prospering?*

Well, in reply to this feedback, we decided to conduct further research which looks not just at a large industry sample, but looks towards the trending data, drawing data from companies that are either active in fund raising or in hiring. From this data, we hoped to see a new or different picture, one that provided greater optimism for women executives, or alternatively further confirmation of our original study data.

The capital intensive nature of biotechnology requires considerable financing to be able to develop a product or technology. By examining funding data of private entrepreneurial biotechs, we would hopefully be able to show clearly the way in which capital is being distributed among private biotech companies and what those companies look like from a perspective of board level diversity. This data would reveal something about the governance of these companies and the leadership culture. Also, it might help us



**WE SHOWED THAT  
OVER 50% OF  
EUROPEAN AND US  
BIOTECHNOLOGY  
COMPANIES HAVE  
ALL-MALE BOARDS.**

understand more about the allocation of capital or its operational utility by the funded companies, thereby better informing future funding approaches.

The venture capital community is commonly quoted as being highly interested in investing in the management of companies, both executive and board. Given this strong focus on investing in management, we were keen to see if capital allocation of new capital inflows differed from the broad industry data for gender diversity we have previously published. While we accept that investors are investing predominantly in the management team because of its ability to execute a successful strategy, the board also is pivotal in that execution. A biotech's board is quite often heavily involved with the company's running, and investors themselves (usually board members) are often highly interventional. Therefore, the strength and diversity of the board is a critical piece of the investment jigsaw.

Furthermore, a couple of the assertions made repeatedly in the wake of our previous study were; 1) Women are opposed to risk and biotech is all about risk. 2) Women are far more present in the industry in clinical and marketing, so you'll see more women in companies from Phase II clinical onwards.

In previous research we actually looked at the diversity data of companies organised by clinical stage, and we observed no meaningful statistical difference based on where companies were in their clinical development programmes. However, by conducting a new study on funding, we hoped we would be able to see if there was any difference by organisational maturity, where the stage of funding acts as a good calibrating-marker for company maturity.

Our study was designed to look at companies across the funding spectrum because both the stage and level of funding a company receives determines the associated degree of risk, and we wanted to see if the gender representation picture differed relatively. When companies advance from Seed or Series A financing through sequential funding stages, so too do their programmes, as new funding is often linked to milestone accomplishments or new data. In general terms, this signals some level of de-risking, so with advancing programmes we wanted to see if this changed the gender balance in company leadership.

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## 2.0 Mapping the funding landscape

Liftstream undertook research of 110 financing deals with biotech companies over a defined 6 month period in HY2-2014/ HY1-2015. During this period we monitored private financing in European and US markets within the biotechnology market. We defined biotech as being therapeutics, platform technologies, as well as gene sequencing technologies involved in therapeutic development.

Our research assessed financing from predominantly venture capital and corporate venture capital but included some private equity, debt financing and other alternative sources of financing such as foundations or family offices, allowing diversified sources of capital. We tracked all lead investors, other investors participating and also any board appointments resulting from these investors. It is important to note the board appointments were excluded from the hiring analysis provided in this report. The financing is assessed by ‘Series Rounds’ and other capital infusions which are alternative or unclassified. All the companies researched were privately owned.

During the period of our research, the total of capital raised was: \$4518.1 million.



THE TOTAL OF CAPITAL RAISED WAS **\$4518.1 MILLION**

Fig. 1 Significant biotech clusters by capital raised



**MASSACHUSETTS**  
**\$1.4bn**



**CALIFORNIA**  
**\$1.2bn**



**UK**  
**\$318m**

Fig. 2 Total funds invested by investment round

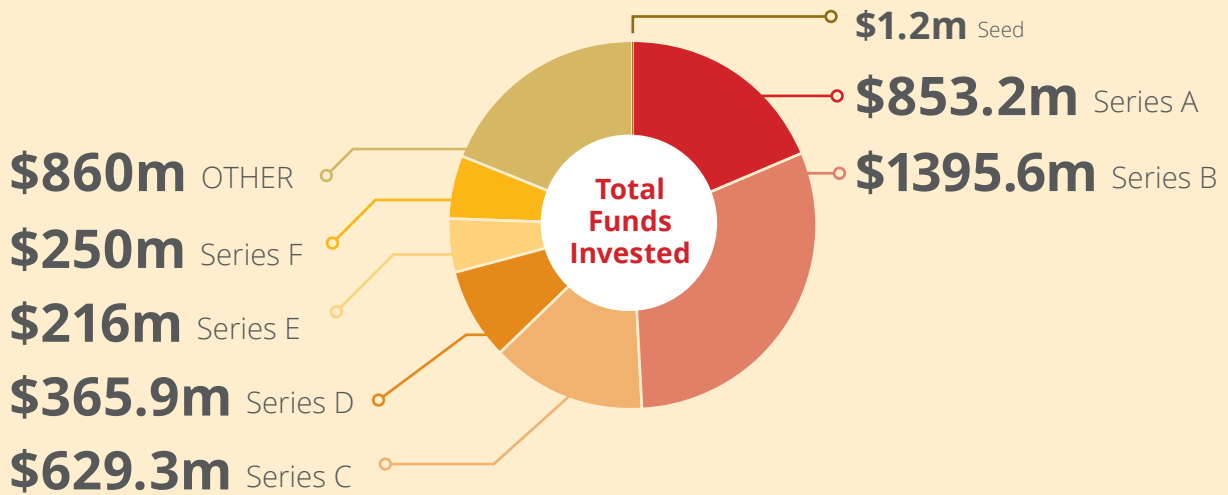
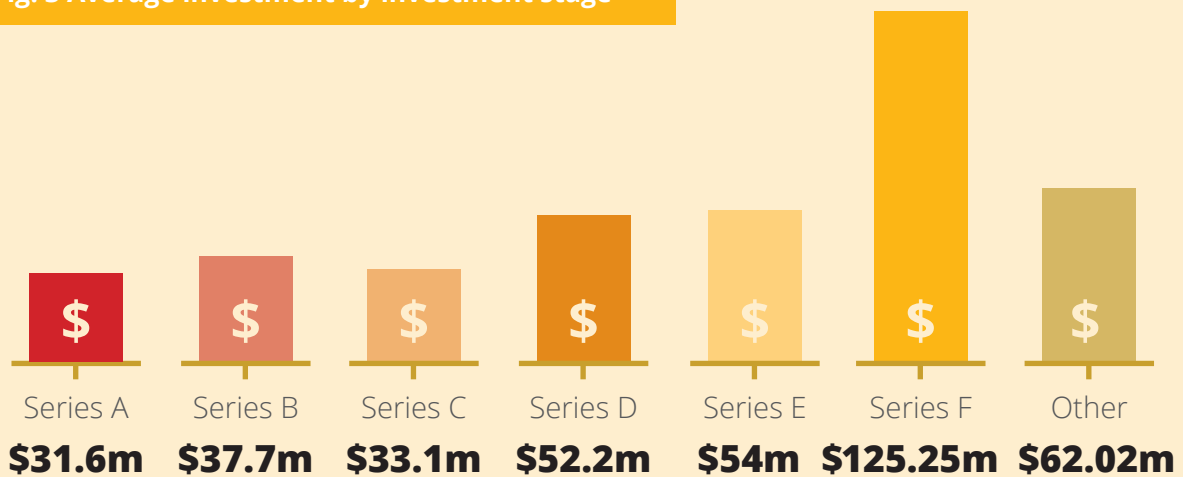


Fig. 3 Average investment by investment stage



This demonstrates a very healthy funding environment particularly in the US, where the geographic leaders in biotech; California and Massachusetts, really excelled in capital raising. It is worth noting that our California data is state-wide, not only the Bay Area, with decent funding levels evident in the San Diego area in particular.

From a therapeutic standpoint, the data showed considerable investment trends towards Cancer therapeutics (inc. antibody, immunotherapy, platform approaches), rare diseases, and gene therapy. All these had companies with higher levels of gender diversity, as did anti-infectives. We have not published the therapeutic breakdown as the gender data showed no particular trend by therapeutic group.



## 3.0 Mapping the executive and board appointment landscape

In conducting the biotechnology industry analysis for this report, we also wanted to measure the trends that are emerging in executive and board director appointments within the biotechnology sector. To do this, we recorded and analysed some 308 such appointments, ranging from Board Director and Chairman appointments, C-Level and Function Leader hiring (VP/SVP). This assessment would allow us to measure where the appointments were occurring and in which functional areas, and whether gender differences appear in this appointment data.

This was important for two reasons, firstly we wanted to see if women were getting appointed at a higher rate than had been recorded in our previous study, indicating a trend of change. Secondly, we identified that investment in the sector from private capital and indeed public capital markets is currently at high levels, leading to increased investment in people, both executive and board directors, which places strain on the human capital resources and perhaps encourages companies to look more broadly to identify candidates. Under this condition, you might expect to see increased levels of diversity above long-term averages. Were this short-term effect seen, it could have a longer-term impact on cultural transformation.

## 4.0 Funding landscape from a gender perspective

Our analysis of the funding landscape showed that of the total amount raised by biotech companies; \$4518.1m, the amount raised by women CEOs was \$242.5m, or 5.4% of the total capital raised was distributed to female CEOs.

Over this period, we identified that the top three financings achieved by female CEOs were as follows:

1. Annalisa Jenkins – CEO – Dimension Therapeutics – \$65m (Series B)
2. Nancy Stagliano – CEO – True North Therapeutics – \$35m (Series B)
3. Mary Szela – CEO – Melinta Therapeutics – \$30m (Debt)

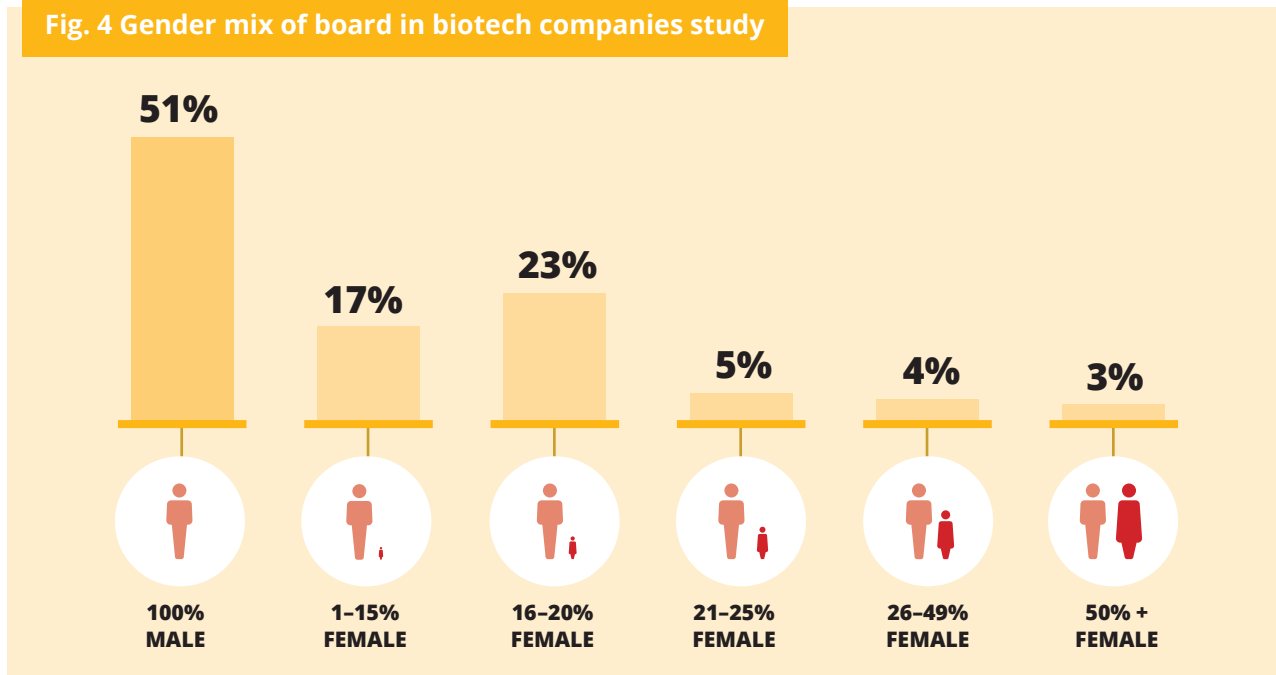
There were 10 Female CEOs funded in our study of 110 financing deals, representing 9% of the deals. This means that for every \$1 invested into companies with a woman CEO, some \$17.6 was invested into male run companies.

Given a board of directors’ responsibilities for the financial health of the company, and governing capital for maximum shareholder returns, Liftstream analysed the gender mix of the board of directors of all of the companies who achieved funding. In doing so, we identified that of the \$4518.1m total funding, some \$2576m or 57% of funding was awarded to companies with all-male boards. This offers a stark contrast with funding raised by companies with a board of directors of 50% or more female representation, which saw only \$60m of funding achieved.



**5.4% OF TOTAL CAPITAL RAISED BY FEMALE CEOs**

**Fig. 4 Gender mix of board in biotech companies study**



In analysing the companies, we categorised the board of directors in terms of gender diversity mix, ranging from 100% male to 50%+ female. There were no companies analysed in this study who have an all-female board, with the highest representation being 60%.

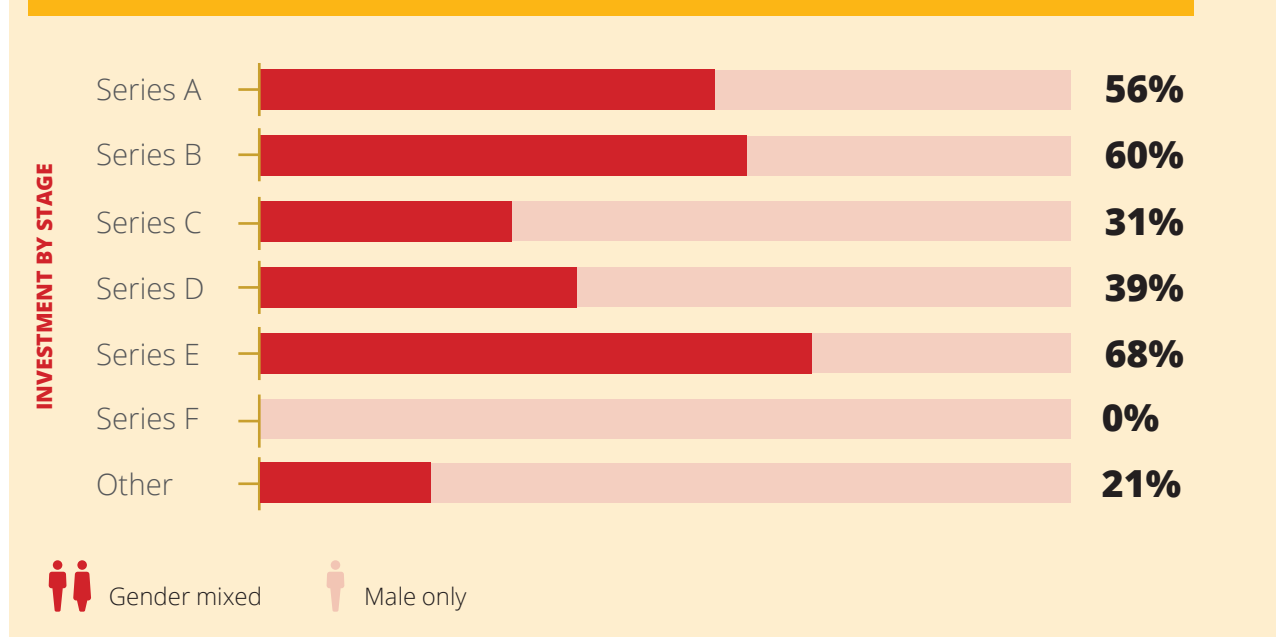
Data generated in this report again confirms that over 50% of biotechs across US and European markets have all-male boards, which is consistent with our previous study. The data above also shows that across all the companies in our study, only 7% of companies had more than one quarter (25+ %) women on their board of directors. This is significant, because initiatives like the 30% Club and also the UK's Davies Report signal that achieving over 25% of women on boards across industry (or all companies) would create adequate internal market diversity to become self-perpetuating. In biotech, this would signal a transformation in 93% of companies. Furthermore, considerable research has been published around the principle of 'critical mass'. The critical mass principle suggests that in order for a mixed board to out-perform that of a single gender, there must be a high enough ratio of women (i.e. 3 out of 10-30%), for female members of the board to be seen as individuals and not as 'diversity figureheads'. This higher-performing level of gender diversity will clearly require a significant shift in culture in biotech.

In the chart below (Fig. 5), we looked at the level of funding by stage of investment and analysed whether that funding had been raised by a gender diverse board of directors, or single gender all-male boards. In doing so, we saw that with early stage investing, Series A and B, where investment totals were also proportionally high, the money invested into companies with at least some level of female representation at board level was above 50%. This indicated, at least in part, that the presentation of a gender-mixed board did not deter investors and also women board members were indeed sitting on boards of companies that were perceived to be of higher-risk.

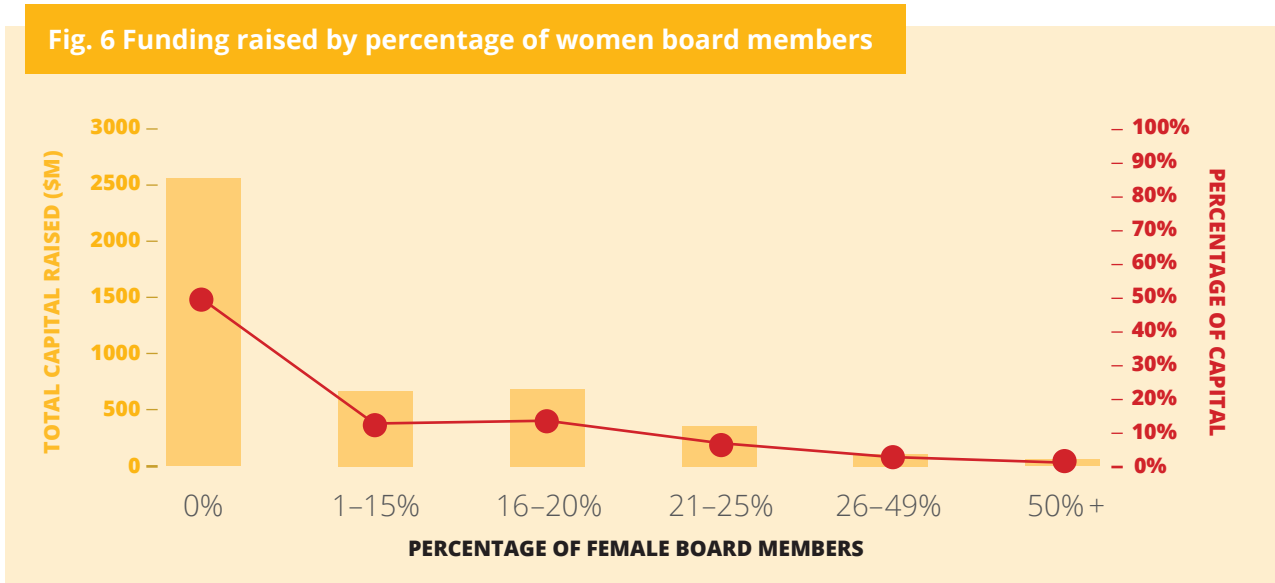


**ONLY 7% OF COMPANIES HAD MORE THAN 25% WOMEN ON THEIR BOARDS**

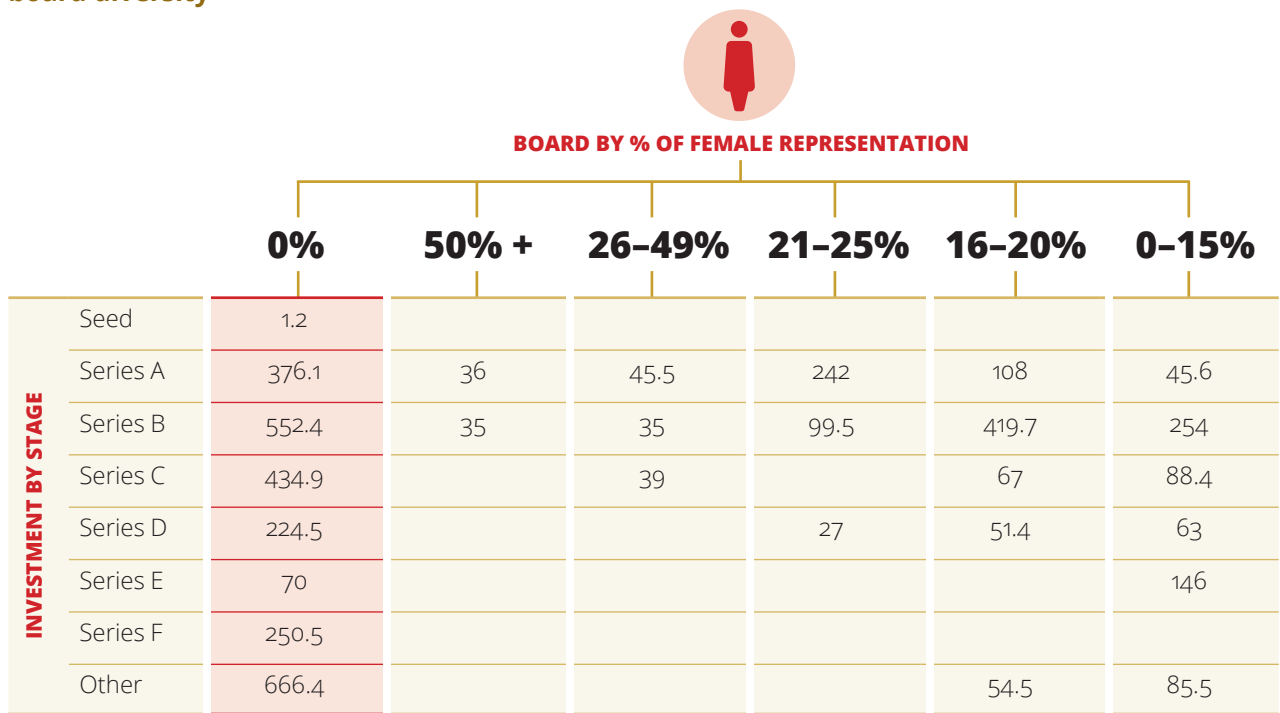
**Fig. 5 Percentage of total capital raised by gender mixed boards by investment stage**



In analysing the amount of capital raised against the percentage of women present on the board of directors among the study population, we see a more contrasting picture. Here you see the disproportionate capital allocation towards all-male boards and those with less than 20% women on the board, which in many biotech companies with smaller numbers of board members, represents only one appointed women board member. The way in which capital levels diminish with increased gender diversity is partly a feature of the very small numbers of companies who have achieved this level of gender diversity at the board level, yet does not detract from the dollar amounts and percentage distribution of the \$4.5bn of capital in our study.



**Fig. 6.1 Disbursement of capital by investment stage and board diversity**



The figure above (fig. 6.1) shows no correlation between greater levels of gender diversity and organisational maturity. In many senses, there is greater presence of diversity in companies at Series A and B, which perhaps shows improving gender diversity in company formations, although this would need a further study of a larger number of early-stage companies. The invested funds categorised under 'Other', signal funding mechanisms like debt and cross-over rounds of financing, typically observed in later stage companies, which again signals the number of women on the boards of later stage ventures does not increase. This substantiates the data shown in our previous study.

## 5.0 Venture capital influencing biotechnology

A factor that strongly influences the composition of a biotechnology company board of directors, is the presence of investors on those boards, normally venture capital investors. In our previous study of prominent venture capital partnerships, we found that just 9.6% of partners were women.

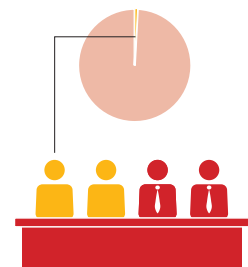
This of course means that when investors place partners on portfolio company boards, there is only a 10% female investor population to sit on those boards. Whereas, in the corporate venture capital market, we observed double the proportion of women occupying partner roles in these corporate venturing arms. This could be a key driver in the diversification of biotech boards. Below we highlight some of the women working in these corporate venturing arms, showing that women are also making it through into the investment environment outside of traditional venture capital firms.

### Women in corporate venture capital

- Marian Nakada – J&J Development Corporation
- Elaine Jones – Pfizer Ventures
- Carole Nuechterlein – Roche Ventures
- Anja Koenig – Novartis Ventures
- Janis Naeve – Amgen Ventures
- Deborah Harland – SR One (GSK)
- Ann DeWitt – Sanofi Genzyme Bioventures
- Geeta Venuri – Baxter Ventures
- Ilka Wicke – Boehringer Ingelheim Ventures
- Tiba Aynechi – Novo Ventures

Venture Capital investing is unquestionably high-risk and poor investment selection can be punishing for a fund's performance. The focus is often towards backing credible and experienced management teams and this is part of de-risking the investments. During the time of an investment, the product or technology can and will likely change, the business hypothesis too, but these vacillations are best in the hands of an experienced management team, whether that is male or female.

The fact that many investors place huge value in trust and credibility, often means they invest in people they are comfortable with, people like them. This creates an investment bias and as such, a bias towards leadership types. Consequently, with such high-risk and high-stakes investing, considerable challenges will persist in shifting the needle towards more female entrepreneurs, executives and board members. The advent of serial female successes will help achieve some of the progress, however, boards will need to exercise greater levels of best practice hiring to have a more telling impact on diversity, gender or otherwise.



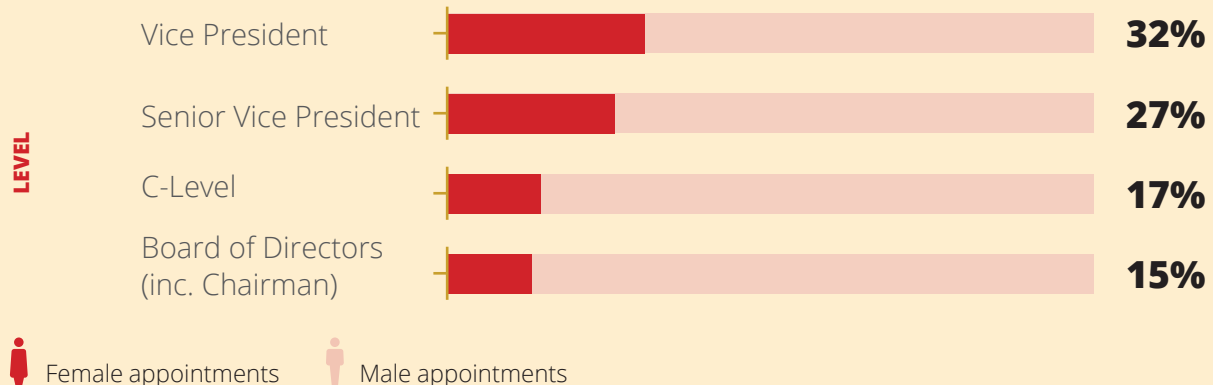
**1% CAPITAL INVESTED  
IN COMPANIES WITH  
AT LEAST 50% FEMALE  
BOARD MEMBERS**

## 6.0 Understanding the executive appointments environment

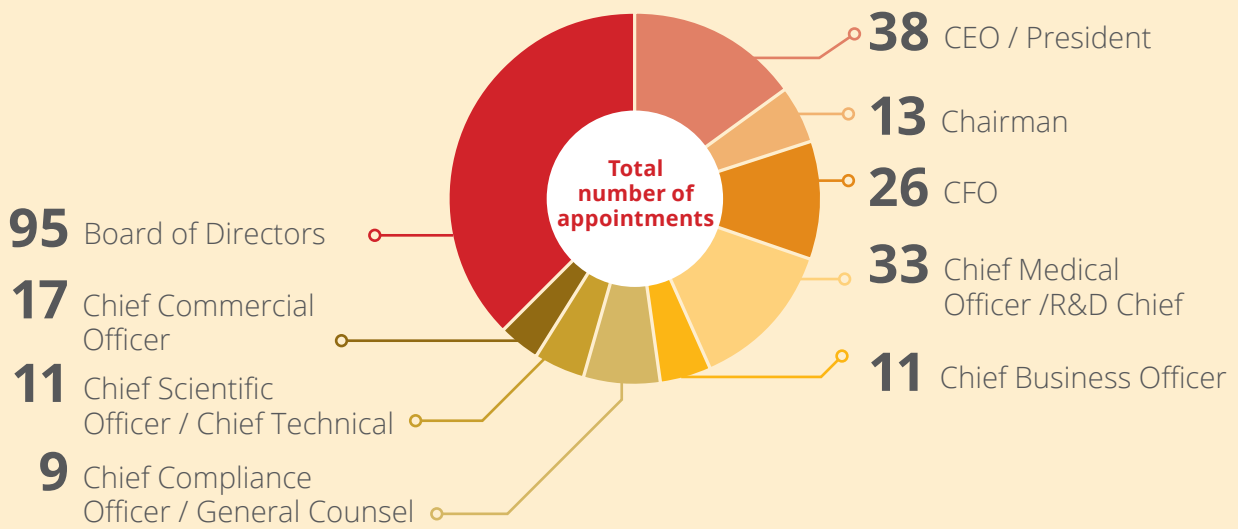
Reaching the C-level or board is the single biggest challenge career motivated women talk about. The high performing women who seemingly run into blockades when looking to elevate their careers to the next level within the C-suite or onto a board, often fail to understand fully why this is. As part of our study, we looked at 308 biotech executive appointments across Board, C-Level and Function Leadership. These positions were recorded for gender, title and functional attachment, in order that we could better analyse where the differences were occurring between genders across the broader executive recruitment landscape.

Across the 308 appointments, only 17% of the total people appointed were women. In the following chart (Fig. 7.), we see that the percentage of women appointed to senior posts diminishes as you go up in level of seniority. For the purposes of this trend analysis, it is apparent that females are being appointed to one-third of VP level appointments. If, as many suggest, the problem at the C-level is merely an issue of pipeline, then we should hopefully see these higher percentages carry through as time affords their progression. For companies who perhaps want to act more immediately, they could opt to leverage the existing pipeline and accelerate the elevation of these VP and SVP candidates.

Fig. 7 Females as % of total appointments by level



**Fig. 8 Total appointments by position**



The percentage of female appointments by position shows a couple of very interesting trends. In the ‘C-level’ commercial appointments, the women executives achieved in excess of 40% of appointments. This was from a small data set but perhaps shows us that the commercial functions have more women executives to draw from, giving companies a strategic option for deepening their gender diversity when making executive and board level appointments.

In contrast, Fig. 9 also shows that of the CEOs appointed, only 3% were women. When set against our previous data of 7% female CEOs in biotech, it shows that the trend line is seemingly in the wrong direction and that investors, Chairman and boards are still almost exclusively favouring male CEOs to lead their biotechnology companies. Clearly the de-risking of appointments by choosing CEOs with proven track-records is limiting the number of women appointed to these positions. Yet, we have seen very successful first-time CEOs appointed in this sector, irrespective of gender. There have also been notable success stories of first-time female CEOs, like Katrin Bosely who managed Avila Therapeutics to a very successful exit and now is heading a new venture, Editas Medicine. Elsewhere, successful pharmaceutical executives have been attracted to the biotechnology sector as first time CEOs, with the likes of Annalisa Jenkins appointed CEO of ambitious gene therapy player, Dimension Therapeutics, after roles with Merck Serono and BMS. And Mary Szela, now heading Melinta Therapeutics after a 25 year career with Abbott.

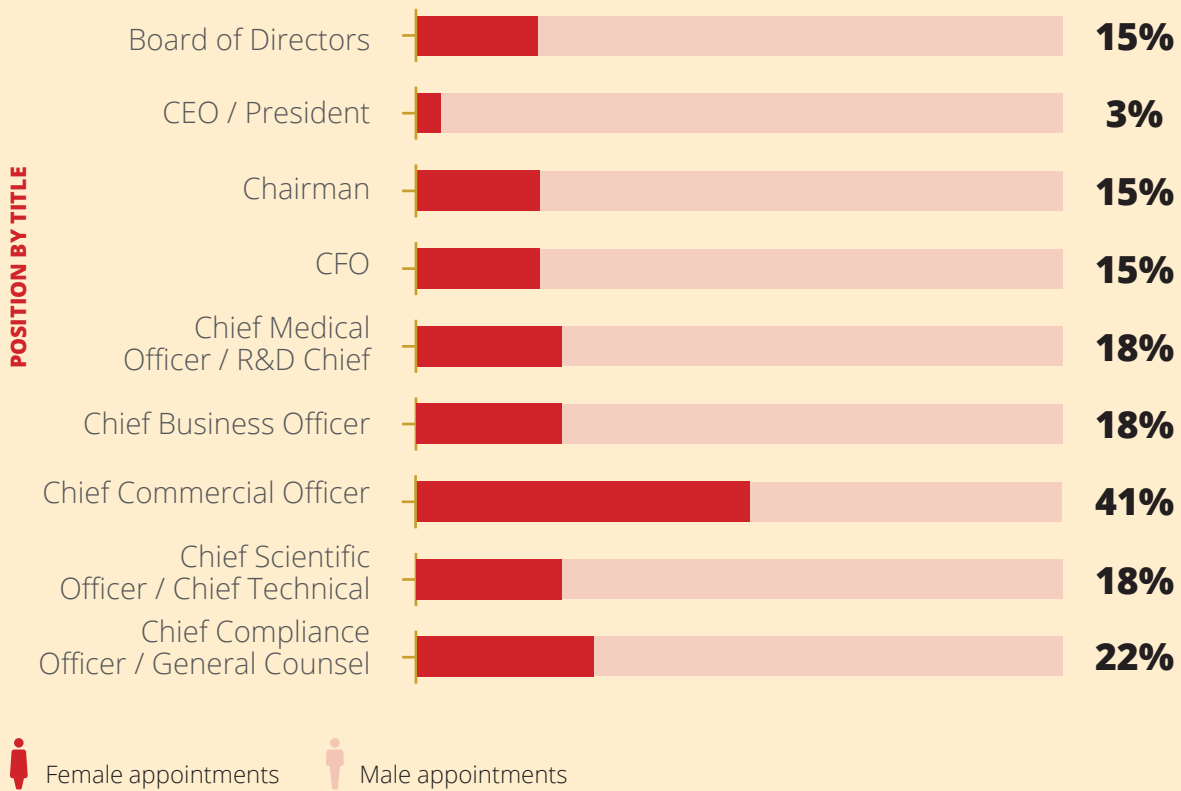


**ONLY 3% OF BIOTECH CEOs APPOINTED ARE WOMEN**

It is often suggested that women are more likely to be selected as CEOs if their boards are well diversified, however, in our analysis of the funding landscape we found that the average board across the 10 companies with women CEOs had only 21% female board representation, which included the CEOs themselves. We also found that for every \$1 invested into companies with a woman CEO, some \$17.6 was invested in companies where there was a male CEO. With funding so critical to many biotechs, are Chairman and boards simply de-risking their CEO appointments by recruiting CEOs with proven capital raising experience and with greater likelihood of securing financing, which seemingly if you’re a man is a heightened probability. If true, this increases the barriers for women of being appointed to CEO roles.



Fig. 9 Percentage of female appointments by position



In the study, we measured 51 clinical development oriented positions as a direct assessment of female employment prevalence within this collective function. Here we found only 22% of appointments were female. This encompassed clinical, medical and regulatory appoints stratified across the levels of VP, SVP, EVP and C-level. This began to show that despite general market assertions that the gender diversity would be found in functions of a clinical orientation within biotech, the degree to which women are appointed to these senior roles is not different from other functional averages and is indeed consistent with the average 21% population of female leadership (non-board) in biotech shown in our larger study; *Diversifying the Outlook*.

## 7.0 Conclusions from the study data

- The funding of private biotechnology companies remains heavily oriented towards male CEOs and all-male boards.
- The presence of women board members in biotech is insufficiently high to create any internal market momentum towards a highly diversified management culture.
- Companies which have appointed women to their boards still remain short of the critical mass to improve returns resulting from leadership diversity.
- The increased presence of corporate venture capital (CVC), where more women investors are found, is populating boards with women.
- CEO appointments remain strongly male dominated across the biotech sector.
- The prevalence of women appointed to executive posts diminishes with seniority.
- Greater maturity of company, as measured by investment stage, is not an indicator of increased presence of women board members.
- There is no evidence of investors preferring to invest in companies with diversified boards and therefore no incentive for biotech companies to act.

In this research we have only chosen to analyse the key data and draw some conclusions. The underlying picture is highly complex and there are many reasons why the biotech sector, and life sciences in general, continues to be highly dominated by the male gender. Transforming this requires Chairman, CEOs, Investors and company employees to proactively engage with this issue to understand what is really happening in the sector and in their own company. The increased value created from diverse teams has been proven by a considerable body of research, so changing the leadership culture of biotechnology is something which should occupy the entire sector.

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## Looking to diversify your company's leadership?

Why not contact Liftstream and benefit from our expertise in the area of leadership diversity and inclusion.

[www.liftstream.com/diversity-and-inclusion.html](http://www.liftstream.com/diversity-and-inclusion.html)

For further reading on the topic of gender diversity, download '**Diversifying the Outlook – The X&Y of Biotechnology Leadership**', our free 60-page study:

[www.liftstream.com/diversity-report.html](http://www.liftstream.com/diversity-report.html)

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## Liftstream – Executive Recruitment Services – Life Sciences

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