

Board Director and CEO Compensation and Governance 2015 Report

San Diego
Biotechnology
Cluster



Knowledge at the heart
of leadership

Data and Trend Analysis
of San Diego Public
Biotechnology Corporate
Boards and CEOs



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Executive Summary

San Diego is a leading centre of biotechnology R&D with many exciting emerging businesses, as well as established companies. Our study selected publicly listed biotech companies across the cluster and researched proxy statements from 2012–2014 to study compensation, composition and governance trends of their board of directors and CEOs.

We selected 44 public biotech companies in San Diego with a total market cap of over US\$37 billion and analysed the data to provide insights for biotech company boards to support their decision making in areas of compensation, succession, refreshment, diversity and composition, thereby enhancing corporate governance.

San Diego biotech CEO salary increased 7.6% from 2012 to 2014 (\$460,749), while CEO total compensation increased 76% during the same period to (\$2,574,362). In 2014, equity awards (option awards and stock awards) make up 71.71% of CEO total compensation, with considerable emphasis on linking equity to LTIs or pay for performance. CEO salary is 17.37% of CEO total compensation. 66% of CEOs took their companies public during their tenure, which partly contributes to the increase in total compensation.

The median of non-executive director fee is \$35,000 in 2014. Perhaps not surprisingly, higher board retainer fees were paid to directors of larger cap companies. The median of board chair retainer is \$35,000 in 2014. There is no relationship between board chair fees and market cap.

Audit committees are paid the highest fees among all committees due to the complexity and the changing nature of financial reporting and regulations. In 2014, the medians of audit, compensation and nomination committee chair fees are \$15,000, \$10,000 and \$7,500, respectively. The medians of audit, compensation and nomination committee director fees are \$7,500, \$5,000 and \$3,500, respectively.

San Diego biotech company boards follow a broader governance trend for greater independence, with 82% of boards splitting CEO and chair roles; 84% of board members are non-executive directors. 31% of board directors have a directorship tenure of over 9 years, an important threshold of perceived independence.

The average board size of San Diego biotech companies in this study is 7 members. The smallest board has 4 members. Only 3 firms have boards with 10 or more members.

The average age of San Diego biotech CEO is 56, and 12% of CEOs are over 65 years old. Their average tenure is 8 years, and 50% have tenures of 7+ years. As more CEOs approach average S&P 500 CEO tenure (8.7 years), we project 25% attrition in the next 18 months among the study group.

The average age of San Diego biotech board directors is 60 years old, and 14% of directors are over 70 years old. The average tenure of all board directors in our study

is 7 years. Among the researched companies, 31 directors departed from their boards in 2014 and 32 new directors joined in 2015. We would expect to see this average age decline over the coming refreshment cycle.

The analysis of CEO and board gender diversity indicates that the San Diego biotech industry is still male-dominated. Out of 44 biotech firms with a total market cap of over \$37 billion, there is only one female CEO. Female directors account for 9% of biotech board directors in San Diego. Education level between genders showed no differences. We also found women were joining the board at a similar age.

In our study, CEOs and board directors have strong educational backgrounds with 86% of CEOs and 71% of board directors having at least a master's degree or above.

Within our study, we identified multiple sector drivers which nomination committees will need to be considering when assessing their board needs. These include; increasing board size resulting from companies maturing, retiring director succession, director's tenures exceeding 9 years.

1.0 Introduction

The San Diego biotechnology cluster is among the top biotech clusters in the US.

Though San Diego's recognition as a life science industry cluster is relatively new, at least when compared to the prominence of its Californian rival in San Francisco and the Bay Area. According to the Milken Institute's: America's Biotech and Life Science Clusters Report,¹ the founding of Hybritech, one of America's pioneer biotech companies, in the Torrey Pines Mesa area in 1978 was the first identifiable step that San Diego took toward becoming one of the world's pre-eminent biotech hubs.

Nowadays, the San Diego biotech cluster has more than 1,100 life sciences companies and more than 80 research institutes. Life science activities account for more than \$31.8 billion of economic impact in San Diego. According to California Life Sciences Industry 2016 Report,² San Diego biotech cluster employed 38,061 people in 2014.

In 2015, San Diego was ranked 4th in a study of biotech clusters in the US by Genetic Engineering and Biotechnology News,³ lagging only Boston-Cambridge, San Francisco Bay Area and New York/New Jersey. According to the 2014 JLL Life Sciences Cluster Report,⁴ San Diego life sciences industry gained \$640.6 million of venture capital funding and \$785.6 million of NIH funding. San Diego cluster produced 956 life sciences patents. The region has 9.5 million square feet of lab space. The lab space will grow when sequencing giant Illumina completes its San Diego manufacturing centre which will be opened in the second quarter of 2016.

According to San Diego Regional Economic Development Corporation (SDREDC),⁵ the county's life science jobs pay an average wage in excess of \$80,000 – 83% above the average pay for all jobs.

San Diego County contains three public state universities: University of California, San Diego; San Diego State University; and California State University, San Marcos. Major private universities in the county include University of San Diego (USD), Point Loma Nazarene University (PLNU), Alliant International University (AIU), and National University. The University of California, San Diego has become one of the top ten public universities in the country. San Diego County higher education institutions produce more than 7,000 STEM graduates annually.

Since its founding in 1961, University of California, San Diego has become one of the world's leading universities for life science research. Ten UCSD faculties have been awarded the Nobel Prize. Nature, in its "Yearbook of Science and Technology", has ranked UCSD as "one of the 10 most powerful research universities in the US".

Furthermore, San Diego is home to the world famous Scripps Research Institute based in La Jolla. This biomedical science research campus has given birth to many exciting spin-out companies that have forged new understanding of diseases and have created significant innovation. Many of those companies are located in close proximity to the 35 acre campus and some are part of this study. The Scripps Research Institute also abuts Salk Institute for Biological Studies and Sanford-Burnham Medical Research Institute.

As one of the most innovative regions in the US, San Diego thrives on its highly entrepreneurial environment. The established research institutions have created a powerful research cluster in the region. The region's partnership with technology-focused networks of business and life science leaders have provided essential ingredients for successful biotech start-ups.

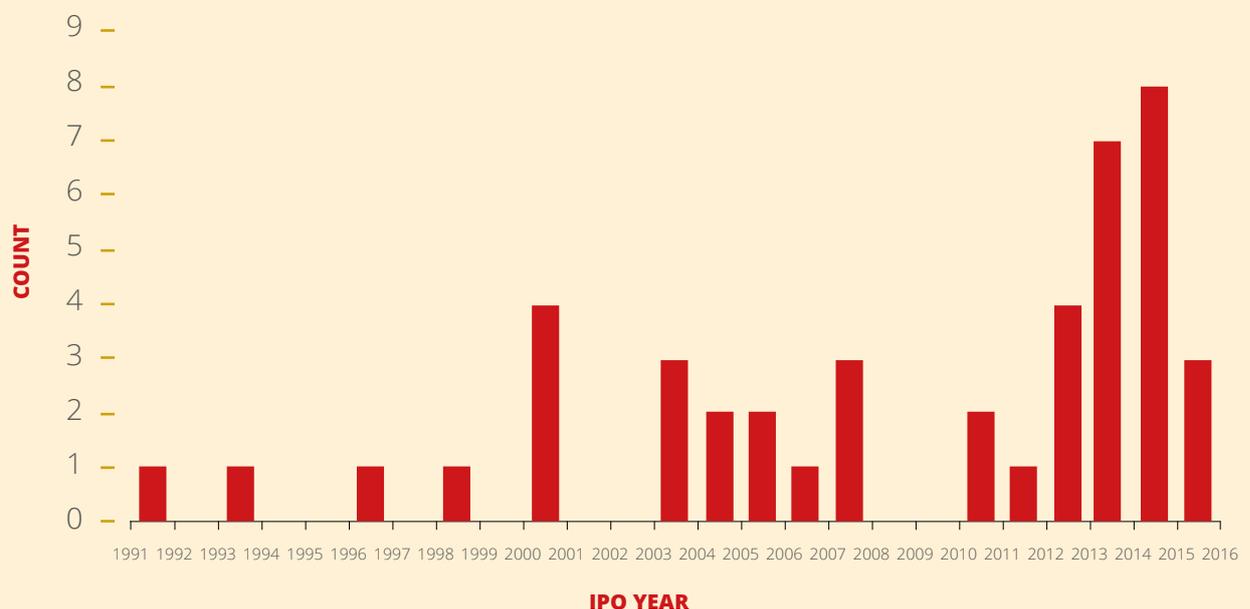
Liftstream, through its studies of biotech clusters across the globe, identifies the critical function that people, skills and leadership provide in a thriving cluster like San Diego. The sustainability of which can be linked to continued supply of world-class talent.

1.1 About the report

Executive committee leadership, and oversight by experienced and skilled boards, will improve performance and governance of the biotechnology companies driving innovation. Understanding the landscape of corporate governance in biotech clusters will help companies evaluate their own boards' strength. This report by Liftstream is part of a sustained effort by Liftstream to analyse Board and Executive Committee data and trends, governance related practices, and how these relate to biotech companies across different global clusters. The Liftstream *Board Director and CEO Compensation and Governance 2015 Report – San Diego Biotechnology Cluster* analyses issues of board and CEO compensation, board composition, diversity and refreshment. We look at 44 public biotech firms with a total market cap of over \$37 billion. Selected firms range from nano-cap to over \$20 billion market cap global corporation.

In our study, 50% of the companies went public between 2012 and 2015. In 2013 and 2014, 7 and 8 firms went public, respectively. Becoming a publicly listed company comes with a higher governance and compliance requirement, and with so many US biotechs having gone public in the past 3 years, we wanted to examine some of the underlying trends among the executive committee and board. Our aim was to look at specific indicators that might provide insights about the CEO and board director hiring, retention and succession. Additionally, we wanted to assess some of the governance practices of the boards to see how, as a select group of San Diego biotechs, they are aligning with common governance standards.

Fig. 1.1 The Distribution of IPO Year



The purpose of this study is to provide a snapshot of the governance practices of the biotech companies at a given point. By reading this report, directors can compare the findings with their own board practices and set goals for board improvement. For compensation committee members, the report shows CEO and director compensation levels of San Diego biotech firms. By categorising selected biotech companies into 5 market capitalization bands, the report provides peer-group benchmarking for companies.

For non-executives who are considering board roles, the Liftstream *Board Director and CEO Compensation and Governance 2015 Report – San Diego Biotechnology Cluster* offers detailed guidance on the board structure of public biotech companies and the fees paid to directors.

In October 2014, Liftstream published *Diversifying the Outlook – The X&Y of Biotechnology Leadership*,⁶ an analysis into gender diversity in biotechnology executive leadership across European and US markets. The study identified the key challenges for improving the participation of women in the C-suite and boardroom, and outlined recommendations to increase gender diversity. Our new report provides additional data and looks at the gender quotients of the CEO and board directors among the San Diego biotech companies. Through this work we aim to understand if more diversity could be achieved to improve leadership and oversight.

In this report, *Board Director and CEO Compensation and Governance 2015 Report – San Diego Biotechnology Cluster*, Liftstream aimed to provide a detailed board governance report that would inform biotech boards, chairs and the respective committees of both private and public boards and to improve the effectiveness and governance of those boards.

1.2 Methodology

- Liftstream included 44 biotech companies (therapeutics and medical diagnostics) based in San Diego County. Selected firms' market cap ranges from \$1.62 million to \$20.8 billion, from early stage to mature corporations. 91% of them have market cap less than \$1 billion.
 - CEO and director compensation data were obtained from company proxy filings in 2015, which are publicly available.
 - There are 44 CEOs and 322 board directors in this research.
 - Company market capitalisation data was obtained from Yahoo Finance as of Feb 2, 2016.
 - Companies are categorised into 5 market cap bands for peer grouping and equal distribution.
 - The CEO salary level is calculated using the mean average of salary data. Board Director retainer fees are shown as the median, upper and lower quartile of fees.
 - Compensation figures from 2012 for 17 CEOs are not available. The analysis of CEO salary and total compensation from 2012 might be distorted due to this absence of data.
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2.0 Board and Executive Compensation

2.1 CEO compensation

CEO compensation remains an emotive issue and many challenges exist for Board of Directors and Compensation Committees to set CEO compensation at the right level. Since the advent of Say-on-Pay in 2011, the composition of CEO pay has been evolving and performance based equity is on the increase, particularly in the form of Restricted Stock or Restricted Stock Units. Many CEO compensation packages are derived by selecting peer companies against which to benchmark. Often this is seen as contestable based on inappropriate selection of the true performance peers.

Long-term incentive (LTI) remuneration is currently the most effective method for boards to address investor demand for pay for performance. The measurement of these long-term performance goals can be difficult, particularly where they have been poorly defined or ill-conceived. They are particularly problematic for many small companies who have great difficulty predicting the sustained performance targets and linking CEO pay to these.

In the first section, we have looked specifically at the CEO compensation of San Diego's biotech companies which are publicly listed.

2.1.1 CEO salary

We studied the mean average of the CEO compensation from a cross-section of public biotechnology companies and found that the basic salary increased by 7.6% from 2012 through 2014. Evaluated by market capitalisation, the companies in the range of \$27–61m, showed the most substantial increase of 14%, a figure which might be attributable to newly public companies amending the compensation mix of their CEOs.

Fig. 2.1 CEO basic salary (\$) 2012–2014 by market cap

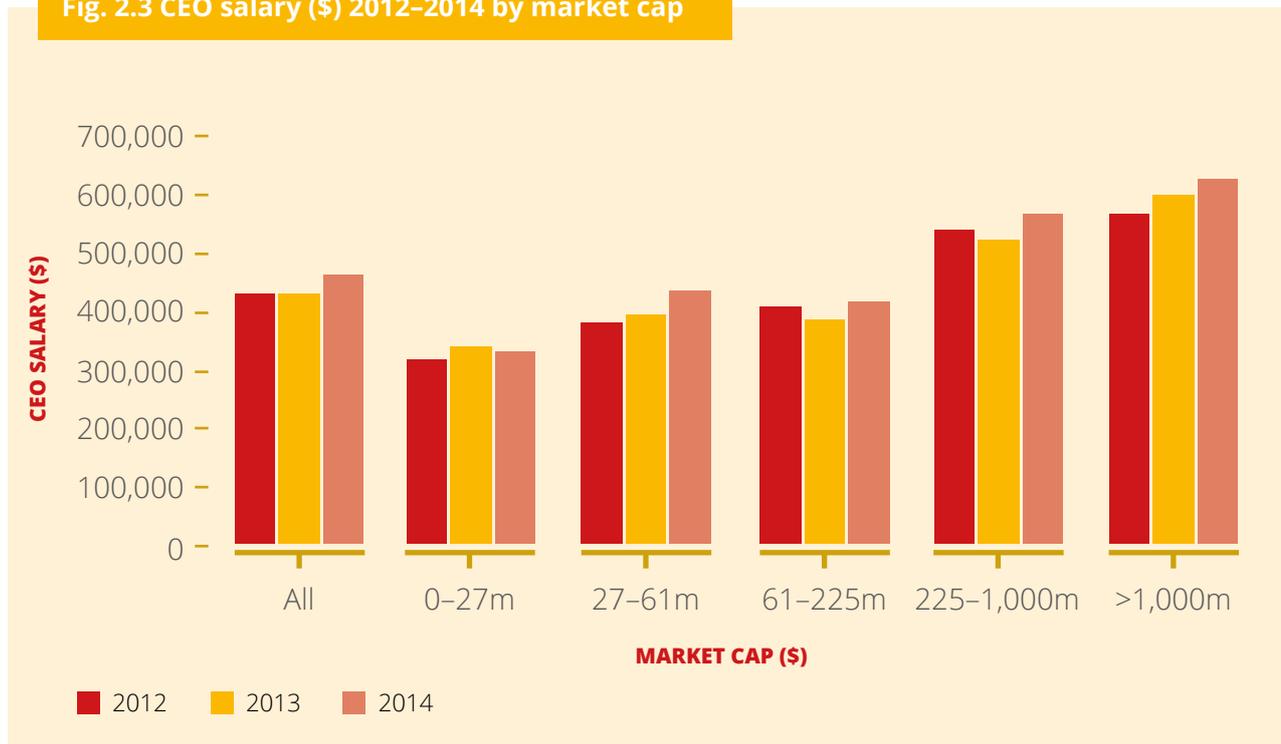
CEO SALARY	MARKET CAP (\$)								
	ALL			0–27M			27–61M		
	2012	2013	2014	2012	2013	2014	2012	2013	2014
Average	428,371	428,126	460,749	313,939	338,552	329,292	380,797	395,674	434,230
Highest	802,950	829,386	859,192	419,935	450,000	450,000	540,750	557,000	557,000
Lowest	135,438	66,091	207,810	247,500	258,457	207,810	150,300	66,091	327,456
	61–225M			225–1,000M			>1,000M		
CEO SALARY	2012	2013	2014	2012	2013	2014	2012	2013	2014
Average	407,976	383,753	417,835	540,221	522,422	567,966	568,952	601,454	626,673
Highest	504,758	504,758	504,758	735,169	735,169	768,252	802,950	829,386	859,192
Lowest	275,000	291,383	263,846	135,438	250,000	403,333	463,040	500,331	510,198

Note: One CEO in \$0–27 million band was paid almost 8 times more than the peer group and was removed from the analysis due to variance from the mean.

Fig. 2.2 CEO basic salary (\$) year-over-year change 2012-2014

MARKET CAP (\$)											
ALL		0-27M		27-61M		61-225M		225-1,000M		>1,000M	
2012-2013 (YOY%)	2013-2014 (YOY%)										
0%	8%	8%	-3%	4%	10%	-6%	9%	-3%	9%	6%	4%

Fig. 2.3 CEO salary (\$) 2012-2014 by market cap



There is an observable relationship between the CEO salary and the market capitalisation of the company for which they work. The most obvious explanation for which is the increased complexity and maturity of those companies. Rare exceptions to this trend were observed and those heightened levels of salary remuneration are shown in Fig. 2.4.

Fig. 2.4 2014 CEO salary (\$) by market cap



2.1.2 CEO total compensation

While basic salary remains very important, CEO compensation is increasingly linked to other remuneration instruments. This can, and often does, take the form of stock awards (RS/RSUs), stock option awards, non-equity incentive plan compensation, bonus and all other compensation.

Overall, CEO total compensation from 2012 through 2014 increased by 76% (\$1,461,947 in 2012 to \$2,574,362 in 2014). The increase was due to improvements in firms' performance, the competition for hiring and retaining competent CEOs, and the practice of benchmarking CEO compensation with peers. There is a large disparity between the highest and lowest total compensation in each market cap band. The total compensation structures vary greatly among different firms.

Fig. 2.5 CEO total compensation (\$) 2012–2014

MARKET CAP (\$)									
ALL			0–27M			27–61M			
CEO TOTAL COMP	2012	2013	2014	2012	2013	2014	2012	2013	2014
Average (mean)	1,461,947	1,793,943	2,574,362	404,303	736,952	1,584,076	1,016,359	2,101,018	1,170,143
Highest	8,171,080	7,296,274	14,856,436	589,264	2,418,000	8,019,274	1,889,593	5,511,731	3,674,410
Lowest	282,199	281,492	281,250	282,199	281,492	281,250	425,489	503,125	556,982

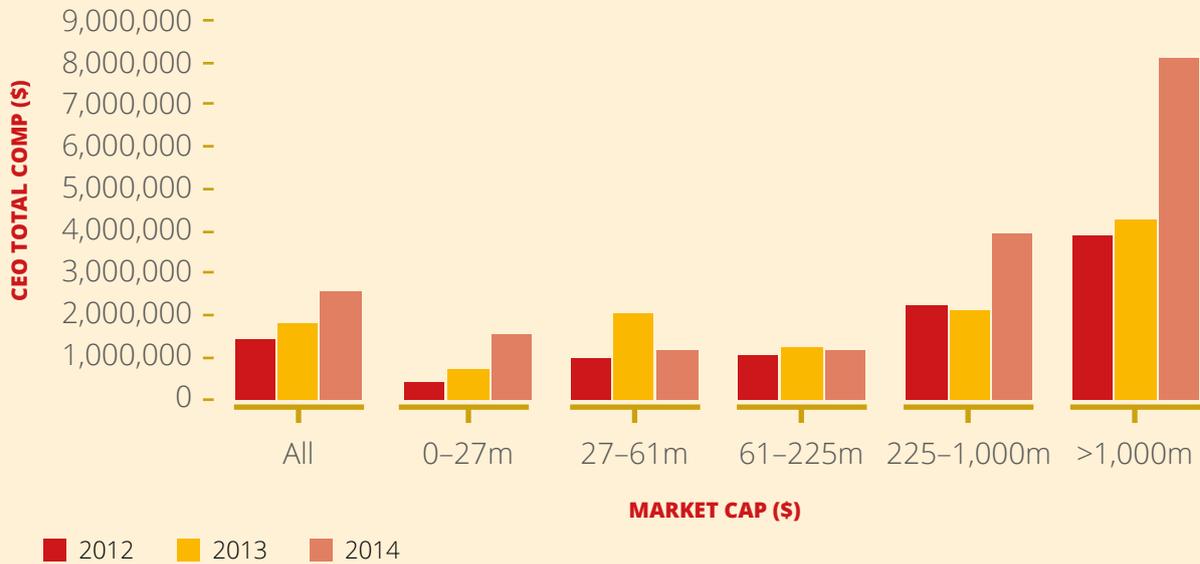
61–225M			225–1,000M			>1,000M			
CEO TOTAL COMP	2012	2013	2014	2012	2013	2014	2012	2013	2014
Average (mean)	1,062,734	1,233,344	1,170,116	2,282,580	2,138,880	3,989,031	3,930,029	4,307,513	8,183,512
Highest	1,914,219	1,915,860	2,109,480	3,989,585	3,967,144	10,400,166	8,171,080	7,296,274	14,856,436
Lowest	547,868	492,413	769,098	1,445,262	544,948	608,333	1,335,343	2,109,998	5,877,502

The increase of CEO total compensation was 10 times greater than the increase of CEO salary, which is perhaps explained by the increase in equity prices among biotech stocks over the period of this study. 66% of CEOs took their companies public during their tenure.

Fig. 2.6 CEO total compensation year-over-year percentage change 2012–2014

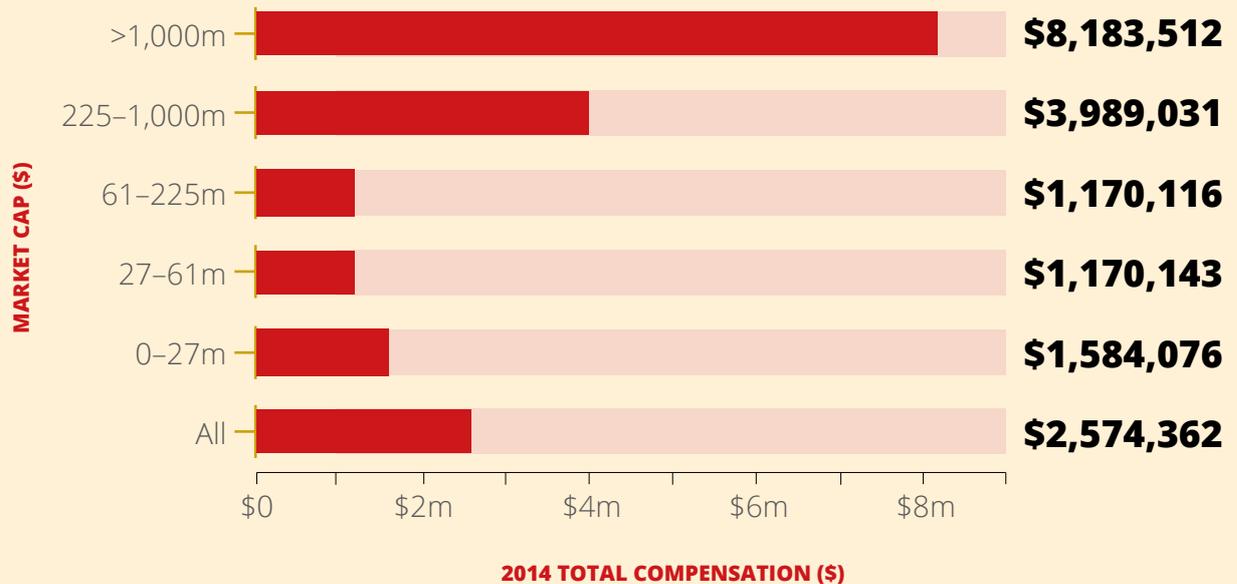
MARKET CAP (\$)											
ALL		0–27M		27–61M		61–225M		225–1,000M		>1,000M	
2012–2013 (YOY%)	2013–2014 (YOY%)										
23%	44%	82%	115%	107%	-44%	16%	-5%	-6%	87%	10%	90%

Fig. 2.7 CEO total compensation (\$) 2012-2014 by market cap



As an overall class, the trend for CEO total compensation steadily increased over the 3 years studied. When grouped by market cap, the year-over-year figures do not show a similar pattern across all the sub-sets, which is explained by some CEO compensation driving up averages.

Fig. 2.8 2014 CEO total compensation (\$) by market cap



2.2 Board Director compensation

The composition of the Board of Directors is incredibly important. The way the board is remunerated, appointed, refreshed, and balanced for diversity of skills and experience is central to good governance and building of the investor's trust. For these reasons, in this report we look at these aspects of the board within San Diego biotechs.

Specifically, we look at board director retainer fees and those fees paid to the members of the various committees. The study looks at the 2014 fees non-executive board directors earned for membership to the board, plus membership to any of the three main committees; Audit Committee, Compensation Committee and Nomination/Governance Committee. The role of Chair was also studied.

The fiduciary responsibilities discharged by the board mean that being a public company board member demands considerable oversight of strategy and risk, all of which requires considerable experience and skill. These requirements have driven the competitiveness for suitably qualified board members, and those able to serve the respective committees. These board directors must be effective in their shareholder engagement too, something which as a public company ushers in contrasting approaches from private company status.

The stiff regulatory and compliance environment and the investor scrutiny of boards means that board directors need to be highly qualified and must evolve their skills. This is a key driver in the compensation provided to board directors and we have set out the fees paid among our study population of San Diego biotechs in the following charts.

The median of non-executive director retainer is \$35,000 in 2014. Retainers range from a low of \$10,000 to a high of \$75,000. The board fee retainer exhibits a relationship with market cap from small to large.

Fig. 2.9 2014 Non-executive Director retainer fees by market cap (\$)

DIRECTOR RETAINER FEES	MARKET CAP (\$)					
	ALL	0-27M	27-61M	61-225M	225-1,000M	>1,000M
1st Quartile (25%) Lower Quartile	32,000	17,500	35,000	25,000	35,000	45,000
Median	35,000	24,000	35,000	40,000	40,000	50,000
3rd Quartile (75%) Upper Quartile	44,000	30,000	40,000	45,000	40,000	50,000

The median of board chair retainer is \$35,000. Board chair retainers range from a low of \$5,000 to a high of \$90,000. There is no statistically significant relationship between board chair fees and market cap.

Fig. 2.10 2014 Board chair retainer fees (\$) by market cap

CHAIR RETAINER FEES	MARKET CAP (\$)					
	ALL	0-27M	27-61M	61-225M	225-1,000M	>1,000M
1st Quartile (25%) Lower Quartile	21,875	14,375	32,500	35,000	23,750	21,875
Median	35,000	21,250	37,500	40,000	30,000	26,250
3rd Quartile (75%) Upper Quartile	41,250	28,750	55,000	45,000	41,250	35,000

Audit committees have the highest fee level among all committees. Due to the constant changes in financial reporting and regulations, boards are more likely to pay premiums for audit committee members with financial and public market expertise. The median of audit committee chair retainer is \$15,000. Compensation and nomination committee chairs receive \$10,000 and \$7,500, respectively. The trend continues in committee member fees. The median of audit, compensation and nomination committee director retainers are \$7,500, \$5,000 and \$3,500, respectively.

Risk oversight is among the board's key role, and the responsibility for which can often be distributed to the various committees. For example, cyber-security risk is often managed by the audit committee, heightening the workload faced by these committee members. Bigger companies are often likely to create additional committees. Increasingly, boards are being encouraged to form Risk Committees to address all new and emerging forms of risk, such as that presented by cyber-security.

The fees are consistent with trends seen in other sectors and are indicative of the challenges which boards face. The complexity of the new regulations resulting from Say on Pay and Dodd Frank, alongside executive and board compensation scrutiny, have heightened the challenges faced by compensation committees, which is reflected in the fees now being commanded for serving on this committee.

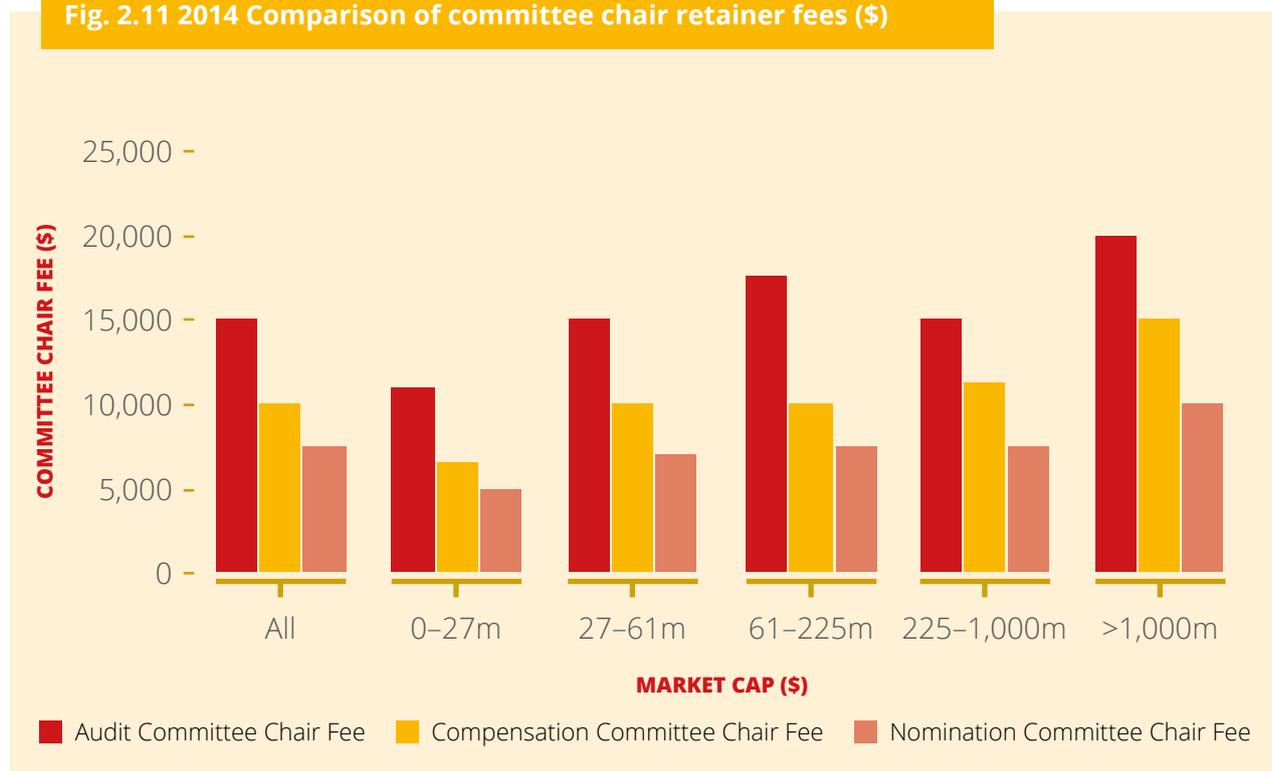
Fig. 2.11 2014 Comparison of committee chair retainer fees (\$)

Fig. 2.12 2014 Audit committee chair retainer fees (\$)

AUDIT COMM CHAIR FEE	MARKET CAP (\$)					
	ALL	0-27M	27-61M	61-225M	225-1,000M	>1,000M
1st Quartile (25%) Lower Quartile	13,500	8,125	15,000	13,750	12,000	20,000
Median	15,000	11,000	15,000	17,500	15,000	20,000
3rd Quartile (75%) Upper Quartile	20,000	14,250	15,000	21,250	18,000	24,000

Fig. 2.13 2014 Audit committee retainer fees (\$)

AUDIT COMM FEE	MARKET CAP (\$)					
	ALL	0-27M	27-61M	61-225M	225-1,000M	>1,000M
1st Quartile (25%) Lower Quartile	7,000	3,063	6,719	5,125	7,500	10,000
Median	7,500	7,000	7,000	8,000	7,500	10,000
3rd Quartile (75%) Upper Quartile	10,000	7,500	7,500	8,000	10,750	13,500

Fig. 2.14 2014 Compensation chair retainer fees (\$)

COMP COMM CHAIR FEE	MARKET CAP (\$)					
	ALL	0-27M	27-61M	61-225M	225-1,000M	>1,000M
1st Quartile (25%) Lower Quartile	9,250	5,000	10,000	7,875	10,000	14,000
Median	10,000	6,500	10,000	10,000	11,250	15,000
3rd Quartile (75%) Upper Quartile	14,750	8,750	11,000	11,250	16,250	20,000

The compensation committee fee level shows little variance for companies with market cap between \$27-1,000 million.

Fig. 2.15 2014 Compensation committee retainer fees (\$)

COMP COMM FEE	MARKET CAP (\$)					
	ALL	0-27M	27-61M	61-225M	225-1,000M	>1,000M
1st Quartile (25%) Lower Quartile	5,000	2,500	5,000	5,000	5,000	7,000
Median	5,000	4,000	5,000	5,000	5,000	7,250
3rd Quartile (75%) Upper Quartile	7,000	4,000	6,000	7,500	6,000	12,000

The nomination committee chair fee level remains relatively consistent for companies of market cap between \$27-1,000 million.

Fig. 2.16 2014 Nomination committee chair retainer fees (\$)

NOM COMM CHAIR FEE	MARKET CAP (\$)					
	ALL	0-27M	27-61M	61-225M	225-1,000M	>1,000M
1st Quartile (25%) Lower Quartile	6,000	4,250	7,000	7,500	6,750	9,000
Median	7,500	5,000	7,000	7,500	7,500	10,000
3rd Quartile (75%) Upper Quartile	9,750	5,500	9,000	10,000	7,500	10,000

The nomination committee fee level remains relatively consistent for companies of market cap between \$0-1,000 million.

Fig. 2.17 2014 Nomination committee retainer fees (\$)

NOM COMM FEE	MARKET CAP (\$)					
	ALL	0-27M	27-61M	61-225M	225-1,000M	>1,000M
1st Quartile (25%) Lower Quartile	3,000	1,750	3,000	2,875	3,000	5,000
Median	3,500	3,000	3,250	3,375	3,625	5,000
3rd Quartile (75%) Upper Quartile	5,000	3,250	3,500	4,250	3,750	7,000

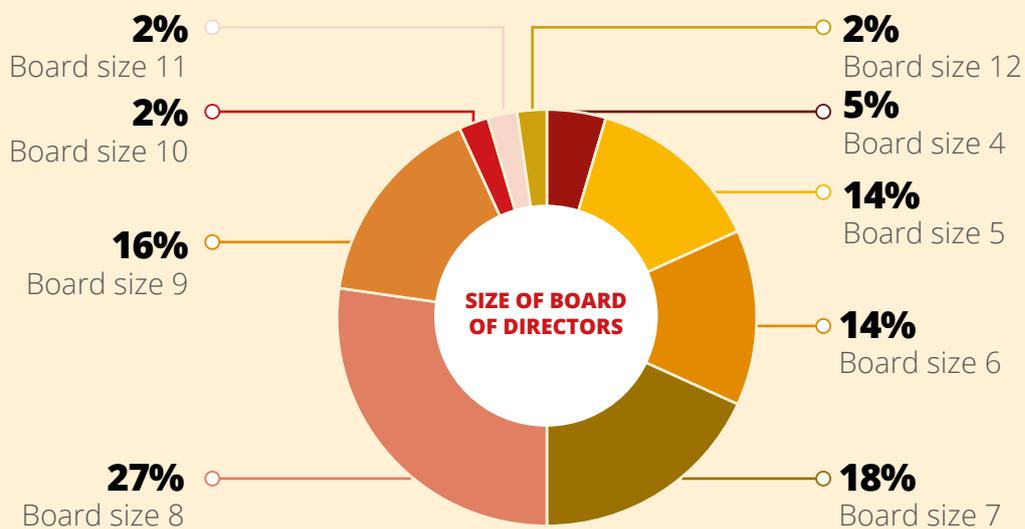
3.0 Board Composition

Board composition is important for the effectiveness of any board of directors. Investors are paying increasing attention to composition to ensure the board has the optimal blend of skills, experience and perspectives necessary to provide strategic and risk oversight. Public Investors are looking for full disclosure on a range of board composition metrics; qualifications, attributes, skills, experience, diversity and also structures. To vote for the election or removal of directors this information is critical. Here we analyse board composition across the San Diego biotech cluster.

3.1 Board size

On average, the boards had 7 board members, despite the biggest group having 8 board members. This reflects a high number of small companies included in the study. The smallest board of directors has only 4 members. Only 3 firms have boards with 10 or more members. The board size is associated with the company size; as market cap increases, the size of the board also rises. For companies with market cap over \$1,000 million, the average board size is 9.

Fig. 3.1 Average board director size (\$)



3.2 Gender composition

Women are underrepresented in the executive and board roles in San Diego biotech firms. There is only one female CEO among the CEOs running 44 San Diego biotech firms we studied in this research, this 2% figure is lower than in prior studies where we have seen 7% and 9% prevalence of female CEOs. The fact that none of these figures are double digit is a poor indictment of the biotech sector and spells out an explicit challenge to the sector to improve this. Female directors account for 9% of board directors in this research.



**1 WOMAN CEO
OF 44 CEOS AMONG
SAN DIEGO BIOTECHS**

In the gender diversity study Liftstream produced in 2014; Diversifying The Outlook: The X&Y of Biotechnology Leadership, women hold 9.7% of board roles in SMEs in the US. For “big biotech” in the US, there are 19.2% of female directors in the boardroom, over twice that of US small/mid cap biotech. Due to the fact that companies in San Diego’s biotech cluster are mainly characterized as small and medium size, the female director proportion coincides with the overall trend in US biotech arena. However we might have expected to see a slightly higher average given that some of the companies in our study are of larger market cap and scale.

The gender composition of boards in biotech remains an area for considerable improvement. The increase in female participation among the board of directors and the executive committee is something that stakeholders should turn their attention towards. The nomination and governance committees must work more proactively to embed suitable process and structures to ensure non-executive and executive hiring is comprehensive, diverse and free from bias.

Fig. 3.2 Percentage of CEOs by gender

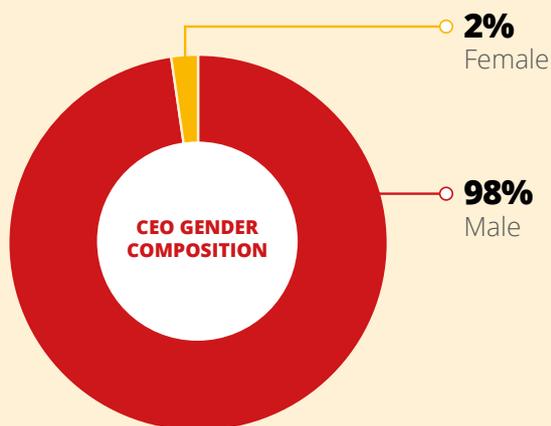
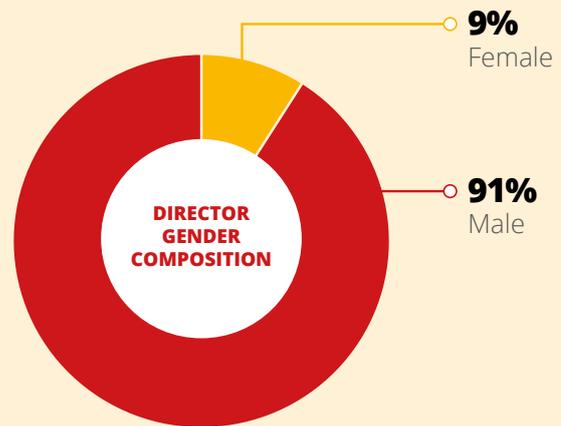


Fig. 3.3 Percentage of directors by gender



Audit committees have 13% women directors, which is greater than other committees. Our research of the San Diego companies indicates that women with financial experience have been appointed to the board as members of the audit committee. This is not a predictive pattern, although may suggest that boards are electing women to the board based on their strong technical competency.

Fig. 3.4 Board committees gender diversity

	MALE DIRECTOR	FEMALE DIRECTOR	TOTAL
Audit Committee	112 (87%)	17 (13%)	129
Compensation Committee	117 (89%)	14 (11%)	131
Nomination Committee	114 (90%)	12 (10%)	126

3.3 Age composition

The average CEO age in San Diego biotechs is 56. Board average age is 60. According to Governance Trends and Practices at US companies issued by Ernst & Young,⁷ the average board director age for small-cap (market cap below \$2 billion) companies is 60.6.

Male directors at San Diego biotech board are 60 years old on average. Female directors are 3 years younger than their male counterparts.

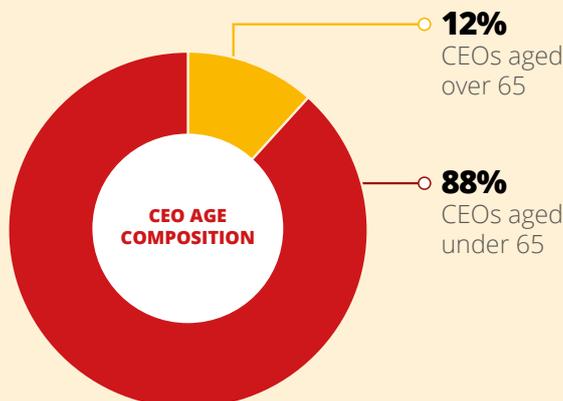
Of the total board director population, some 14% are currently over the age of 70. Liftstream used 70 as an indicator of increased probability of retirement and a trigger for board succession planning. This would mean that 44 current members of the board population could be entering this succession phase.

Age is a diversity quotient often overlooked and is equally important. Avoiding a ‘lock-out’ where the director population is increasingly ageing and not retiring, thereby limiting opportunity for a new generation of younger board directors, is something to pay particular attention to. However, equally we need a director population which has adequate experience, something age often brings.

Fig. 3.5 Board director age average (mean)

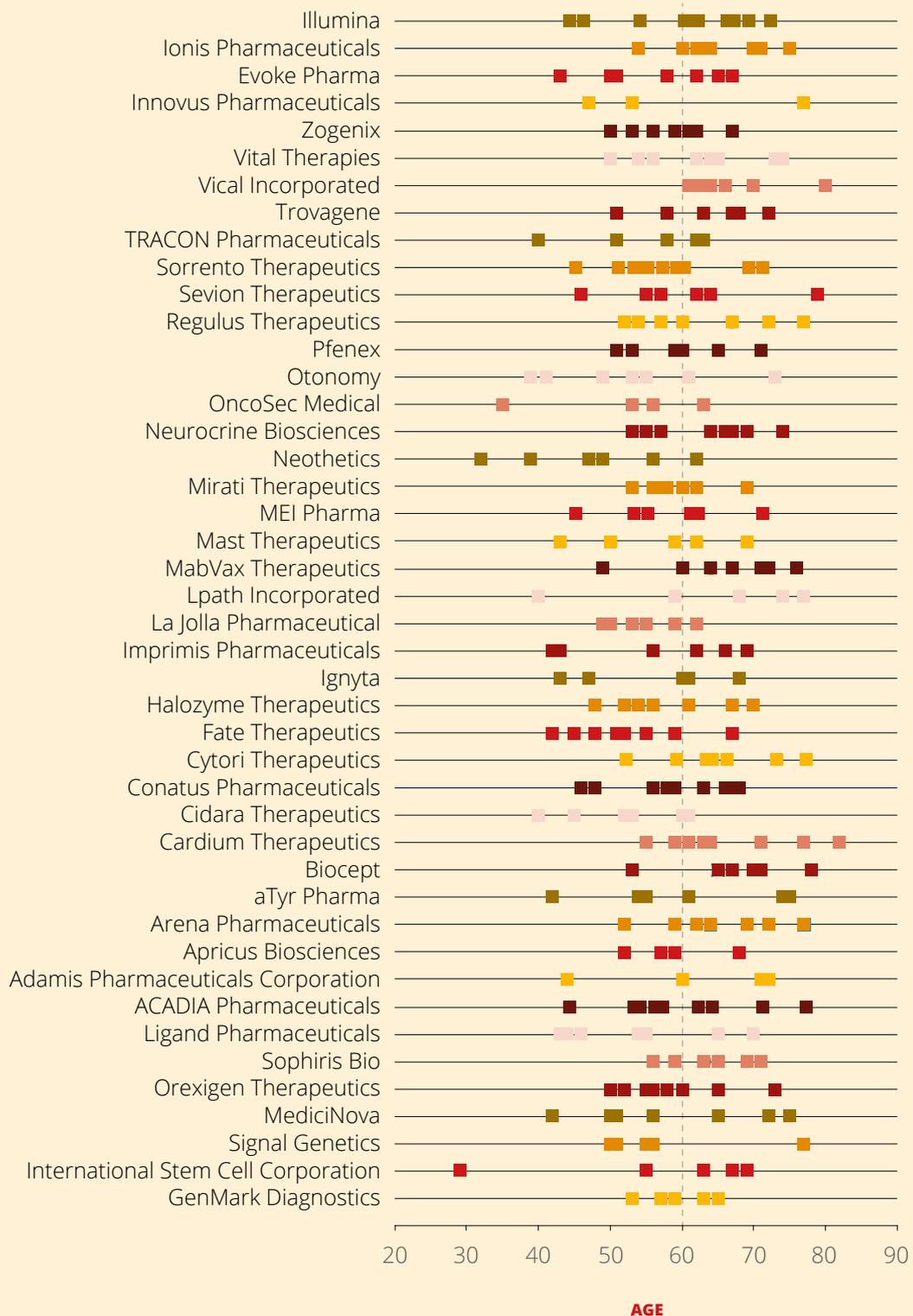
DIRECTOR	AVERAGE AGE
Female	57
Male	60
All	60

Fig. 3.6 Percentage of CEOs aged over 65 years old



Average age is merely one indicator but overall, it is the diversity of ages that offer value to the board composition. To do this, Liftstream has charted the age distribution of each board in our study. The more dispersed the data points, the more diverse the age composition of directors. Highly clustered data points indicate a narrower age range and therefore less diverse board.

Fig. 3.7 Age composition by company board

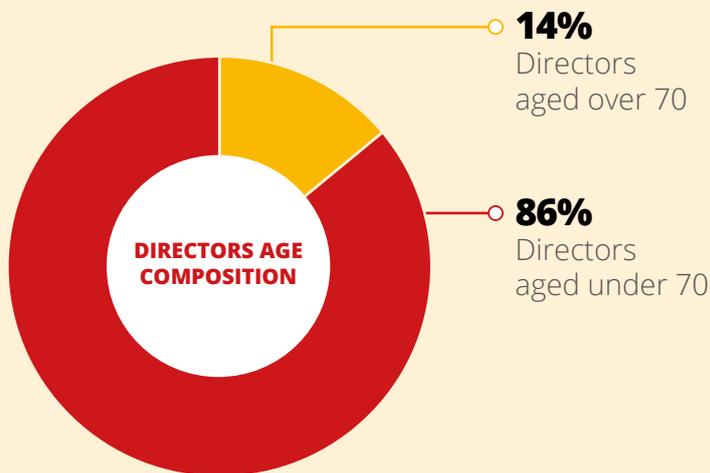


Director ages range from a low of 29 to a high of 82. There are 18 directors aged 62 and this prevalence is shown in Fig. 3.8.

Fig. 3.8 Board director age distribution



Fig. 3.9 Percentage of directors aged over 70



3.4 Board tenure

Age and board tenure often show a direct correlation. With many company boards retaining non-executives for many years, inevitably, both tenures and ages climb. It perhaps indicates insufficient or irregular evaluation of the board members and their effectiveness. A lack of board refreshment is an area of governance that is prompting shareholder resolutions and Chairs and nomination committees are being asked for increased disclosure around their evaluation and succession practices.

It is understandable that boards wish to retain highly experienced board directors beyond expected retirement ages and where there is no explicit retirement age, this can result in the postponement of directors being replaced. This lack of board refreshment can prompt concerns about the board's preparedness to address the changing needs of the company and also gives rise to concerns about the relative independence of the directors. A board member who has held a board seat for in excess of 9 or 10 years might be deemed no longer independent.

The average tenure of CEOs in our study of San Diego biotechs is 8 years. The average tenure for board directors among the same sample is 7 years. Male directors' tenure is 7 years on average. Female directors' tenure is 6 years.

Liftstream found that 31% of all board directors in the study have served their boards for 9+ years, suggesting that these board members no longer qualify as being fully independent. Refreshment of these board directors should be given full consideration by the board and nomination committees.

Based on data from Ernst & Young's Governance Trends and Practices at US companies, San Diego biotech's director tenure is shorter than the tenure of US small cap companies, which is 8.6 years on average.



**CEO AVERAGE TENURE
IN SAN DIEGO BIOTECH
IS 8 YEARS**

Fig. 3.10 Average board director tenure (years)

DIRECTORS	AVERAGE OF TENURE
Female	6
Male	7
Total	7

3.5 Board educational level

The biotechnology industry attracts and demands a highly educated workforce. Our study found it common for San Diego biotech executives and directors to have higher degrees such as, PhD, MD, MBA, JD and MSc. Among the cohort of CEOs, 86% (38 out of 44) have a master's degree level or above. Of those CEOs, 8 have multiple master's degree level or above.

Fig. 3.11 CEO educational level (higher degrees)

PHD	MBA	MD	MASTER
20	11	12	9

71% of directors have master’s degree level or above. Men and women were seen to have similar educational levels, although the comparable sample sizes were quite different.

Fig. 3.12 Board directors educational level (higher degrees)

	GENDER	MASTER'S DEGREE OR ABOVE	MASTER'S DEGREE OR ABOVE
Female	29	21	72%
Male	293	208	71%
Total	322	229	71%

3.6 Board independence

Liftstream is an advocate, along with many experts of corporate governance, for splitting the role of CEO and Chairman. The appointment of Lead Independent Directors is one way to ensure greater independence of the board and challenge to the CEO/Chair where these roles are combined. We saw little evidence of the Lead Independent Directors among our study group, with just 5 boards having this person. In our study, 82% of companies have split the CEO and Chair roles, a figure which is consistent with the year over year increase in this role separation witnessed across broader indices. Only 8 companies combined CEO and Chair roles, which demonstrates the trend for more independent governance is clearly winning out across the biotechnology industry, placing combined CEO/Chairs very much in the minority.

Our research shows that 84% of board members are non-executive directors. Non-executive directors can contribute knowledge from other companies and their independent judgement on strategic decision-making. Non-executive directors on the board enhance the confidence of investors due to having independent representatives safeguarding their investment.

Fig. 3.13 Percentage of combined Chairman and CEO role

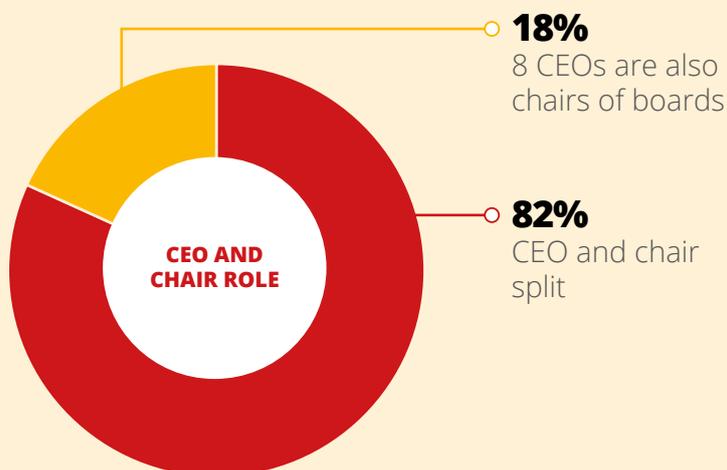
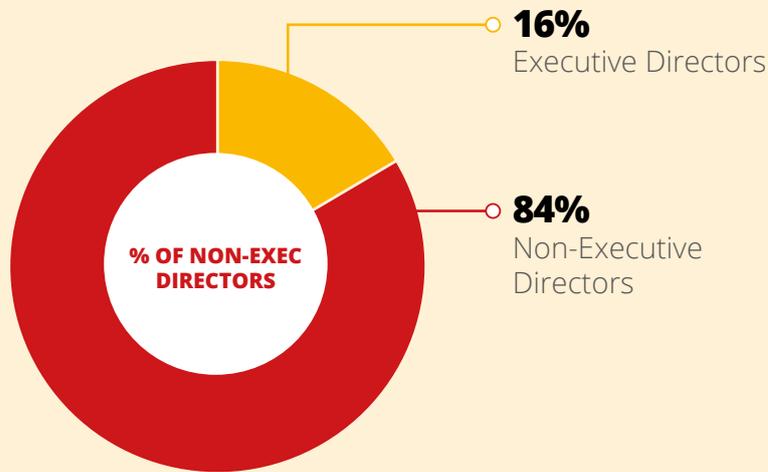


Fig. 3.14 Non-executive and executive directors as percentage of total board population



3.7 Board refreshment

31 directors departed their board seats in 2014. Among them, 2 directors were female. 32 new directors joined in 2015. Among them, 4 were female. The average age of departed directors is 59. The average age of incoming directors is 57. We found that 71% of departed directors have master's degree level or above. 88% of incoming directors have master's degree level or above. Newly appointed directors joining San Diego biotech boards were unsurprisingly younger than those outgoing and there were more with higher degrees.

Fig. 3.15 Board refreshment

	NUMBER OF DIRECTORS	FEMALE DIRECTORS	MALE DIRECTORS	AVERAGE AGE	MASTER'S DEGREE LEVEL OR ABOVE	MASTER'S DEGREE LEVEL OR ABOVE %
Directors departed in 2014	31	2	29	59	22	71%
Directors joined in 2015	32	4	28	57	28	88%

Conclusions

- The median of non-executive director fee is \$35,000 in 2014. Generally speaking, board retainer fees increase with market cap: the larger the market cap, the higher the board retainer. The median of board chair retainer is \$35,000. There is no statistically significant relationship between board chair fees and market cap.
 - Audit committees have the highest fee level among all committees. Due to the constant changes in financial reporting and regulations, boards require audit committee members with deep financial expertise and audit experience. This coupled with the complexity of tasks the committee faces explains the relative fees of the audit committee.
 - CEO total compensation increased from \$1,461,947 in 2012 to \$2,574,362 in 2014. There is a large disparity between the highest and lowest total compensation in each market cap band. The total compensation structures vary greatly among different firms. No obvious pattern between market cap and total compensation could be identified.
 - Equity incentives serve as the main financial incentive for attracting executives in our study, most of which are long-term incentives awards. Equity incentives (option awards and stock awards) make up 71.71% of CEO total compensation. CEO salary is 17.37% of CEO total compensation. CEO bonus is 4.19% of total compensation. This is because most of the companies in our study are biotechs in relatively early stages of maturity, therefore cash incentives have been reduced in favour of equity arrangements.
 - CEO salary increased from \$428,371 in 2012 to \$460,749 in 2014. CEO salary in 2014 is exhibited a relationship with market cap.
 - Women are underrepresented in executive and board roles in San Diego. Out of 44 biotech firms with a total market cap of over \$37 billion, there is only one woman CEO. Women directors account for just 9% of biotech board directors in San Diego. The proportion is marginally below that of biotech SMEs (10%) in Europe and the US, discovered in separate Liftstream research.
 - San Diego biotech boards demonstrate good levels of independence. 82% of boards split CEO and chair roles. 84% of board members are non-executive directors. The figures demonstrate a trend of boards' effort of ensuring an appropriate balance of power.
 - The average board size of San Diego biotech companies is 7 members. The smallest board has 4 members. Only 3 firms have boards with 10 or more members. Optimal board size is driven by the strategic requirements of the company and the responsibilities needed to be discharged by the board of directors. We would expect to see an augmentation in the total number of board directors among the study group of companies.
 - The average age of San Diego biotech CEO is 56. Their average tenure is 8 years. According to Harvard Law School Forum on Corporate Governance and Financial Regulation,⁸ S&P 500 CEO tenure between 2001 and 2014 is 8.7 years on average. With 50% of the CEOs in the study having served 7 years or more, we fully expect board and nomination committees to be active in beginning to plan succession of the CEOs who are reaching this critical threshold.
 - Biotech industry requires talents with high degrees and specialised skills. In our study, 86% of CEOs have master's degree level or above. It is also common for CEOs to have multiple higher degrees. In researching prior employers among the cohort of CEOs, we found no particular dominant source of CEO talent but varied experience across many different biotechs.
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- The average age of San Diego biotech board directors is 60 years old. Their average tenure is 7 years. In our study, 31 directors departed from their boards in 2014 and 32 new directors joined in 2015, only 12% of which were women. Many boards do not show an urgent need for refreshment based on age or average tenure but do show a need for diversity, particularly in respect of gender.
 - 71% of board directors have master's degree level or above and male and female directors have similar educational background.
 - Factors driving local board recruitment among the companies studied were seen as being; increasing maturity, impending succession of 44 directors over the age of 70, and 31% of board directors with 9+ year tenures. We predict that the demand for board directors among the current cohort of publicly listed biotechs in San Diego will remain high and therefore competitive. This is likely to encourage continued out-of-state hiring as well as a greater level of board directors holding larger portfolios of board memberships.
-

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