New Jersey Life Sciences

Where Science is Life

June 2008

The New Jersey Biotechnology Industry Survey

BioNJ
Advancing the State of Biotechnology

Ernst & Young
Quality In Everything We Do

BioNJ and Ernst & Young wish to thank Celgene Corporation, Medarex, Inc. and PTC Therapeutics, Inc. for the use of their photographs.

Dear Industry Member,

It is with a great sense of pride and excitement that we unveil the results of the 2008 BioNJ Industry Study, *New Jersey Life Sciences...Where Science is Life*, which was conducted with the assistance of Ernst & Young. The results for this year's survey were consistent with the U.S. biotechnology industry as a whole. Meanwhile, the fundamental ingredients for biotech to continue and build upon its successful and robust presence in New Jersey continue to exist.

New Jersey's biotechnology industry continued to both grow and mature in 2007. The industry expanded as measured by several important factors, with the number of public and private companies located in the State increasing beyond 2005 levels, while public companies experienced growth in the number of employees, revenues, research and development expenditures and market cap.

Among the highlights, the survey reported that:

- The number of companies operating in the State increased to 238 in 2008 from 226 in 2006 despite a trend toward mergers and acquisitions.
- The number of employees working at public companies at the end of 2007 was estimated at 6,115, representing an increase of 5 percent over the 2005 level of 5,824 employees.
- Eighty-six percent of the surveyed companies expect to hire on average an additional 20 employees in the next 12 months.
- R&D expenditures at public companies in 2007 were $1.2 billion compared to the $737 million spent in 2005.
- New Jersey's 32 public companies in 2007 generated revenues in excess of $3.2 billion, an increase of 113 percent from 2005, while estimated revenues for both public and private companies were well above $5 billion.

A number of challenges do still remain. Research funding, particularly for early-stage research, continues to be an issue industry wide.

As we believe this survey clearly demonstrates, New Jersey's biotechnology industry is at an interesting turning point in its development. Visionary entrepreneurs continue to start new companies even while a number of well-established companies are beginning to experience a new level of maturity with many companies demonstrating real growth in terms of product sales and market capitalization.

And despite a challenging economic climate, we expect that New Jersey's biotechnology industry will continue to demonstrate a significant level of growth and maturity well into the future.

This survey would not be possible without the insight, time and talent provided by Ernst & Young, or the guiding hand of the BioNJ Board of Trustees, and we thank both for their significant efforts.

But the real debt of appreciation goes to the dedicated men and women who go to work each day and move this vital industry forward through their dedication to finding the therapies that will save and improve the lives of people around the world.

Yours in BioNJ,

Michael D. Becker
President and Chief Executive Officer
VioQuest Pharmaceuticals, Inc.
Chairman, BioNJ

Debbie Hart
President, BioNJ

The New Jersey Biotechnology Industry Survey

BioNJ, with assistance from Ernst & Young LLP, conducted a survey of the New Jersey biotechnology industry during the spring of 2008. The goals of the survey were to identify trends that pinpoint the strengths of the industry in the State and what can be done to improve it in the future. In addition, we have used the results from this year to benchmark against our 2006 and 2003 surveys to enable trends to be identified and addressed. The survey questions were consistent with those of the prior surveys, which were developed by Ernst & Young. It was circulated to the biotech companies in the State and a response of nearly 20% was received. Responses were received from early-stage to well established companies, providing a cross section.

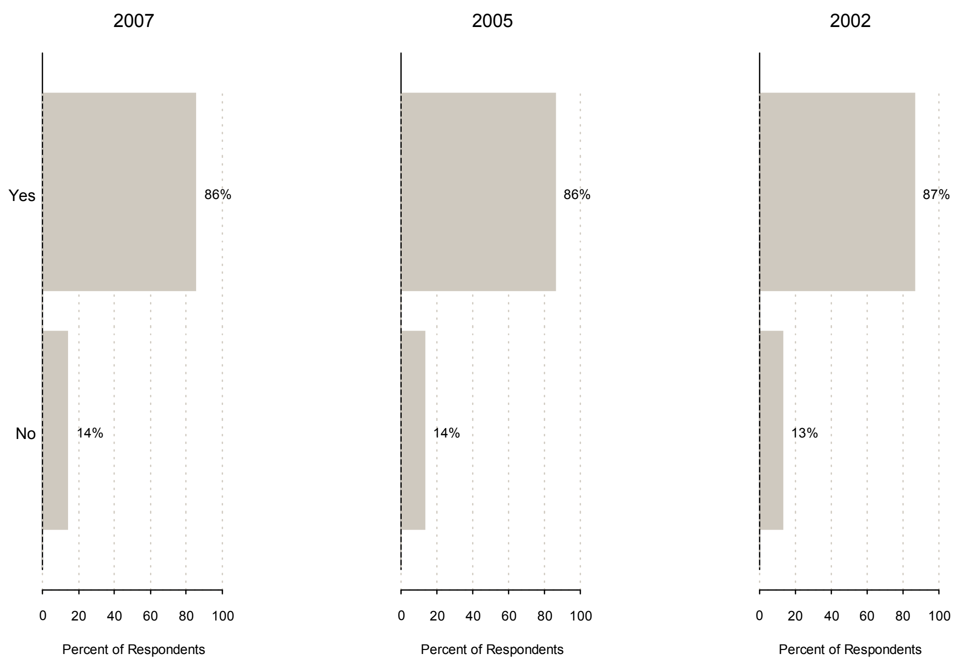
New Jersey has been recognized as a “hot bed” for bioscience companies for some time. As noted in our prior surveys, this continues to be true in 2008. New Jersey’s 32 public biotech companies (fourth largest public company cluster in the United States) generated in excess of $3.2 billion in revenue in 2007, an increase of 113% from 2005. Revenues continue to be generated from product sales, research tools and collaborations and alliances for research and development. The addition of private companies pushes total revenues well above $5 billion. The aggregate market capitalization of our public companies at December 31, 2007 was $29.7 billion compared to $16.9 billion at December 31, 2005.

Because of the slightly different mix of respondents to the survey in 2008 when compared to 2006 and 2003, some of the charts in this report have slight variations. In 2008 we had more, larger global companies respond and this has caused some of the information to appear to show reduced New Jersey operations or presence. However, this is a factor of the mix of those companies responding year over year and represents the continued maturation of the New Jersey biotech industry and demonstrates its expanding global reach.

A few trends continue to be clearly distinguishable.   The key trends include 1) continued strong and fundamentally sound science as demonstrated by licensing agreements and the multitude of areas being studied, 2) the belief by respondents that New Jersey has the scientific talent needed to commercialize and manage current research and development projects, and 3) the fact that as in the worldwide industry, early-stage research funding is still difficult to obtain. Similar to prior surveys, despite the concern over funding, 86% of the respondents indicated that they expect to hire on average an additional 20 employees over the next 12 months. This amount is up from 13 in 2005 and 10 in 2002 and represents a very positive trend. [This is in addition to the growth in employees at New Jersey public biotech companies to 6,115 at December 31, 2007 – an increase of 5% from December 31, 2005.] This translates into a strong belief that the financing environment will be able to provide the funds needed for continued growth.

Do you anticipate hiring additional employees over the next 12 months?

Average number of people to be hired - 2007: 20 2005: 13 2002: 10



A Summary of Survey Results

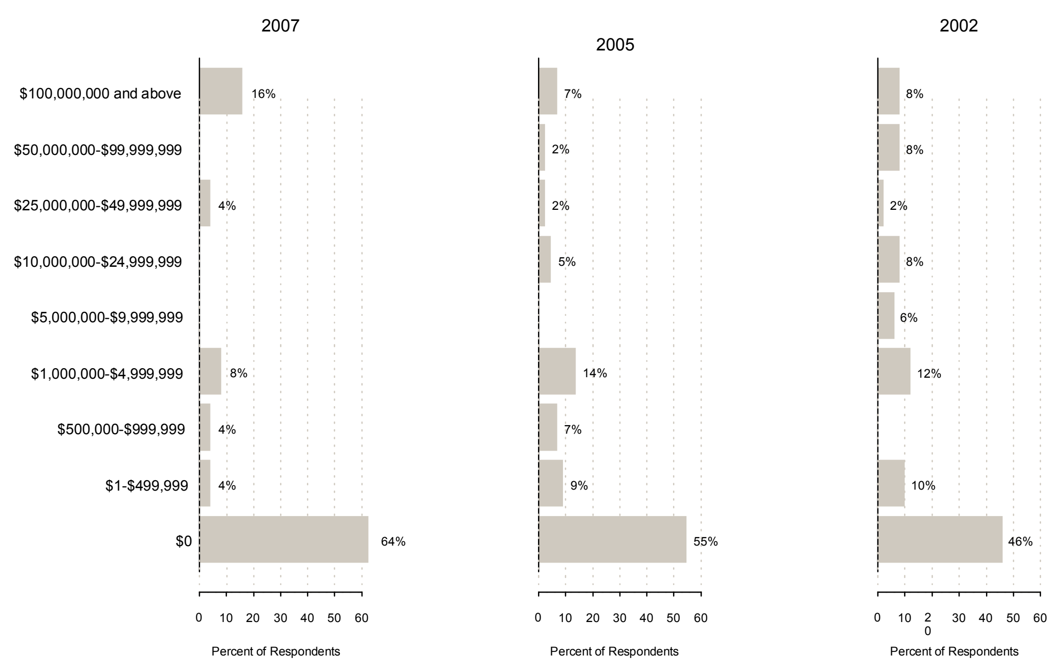
For both the US biotechnology industry and the New Jersey biotechnology industry, the 2007 fiscal year was one of mixed results. While deal values soared and companies throughout the US attracted record-breaking amounts of financial capital, the industry was also forced to confront increasing safety concerns, a difficult product approval environment, and emerging challenges from the legislative debate in Washington D.C.

As a testament to the growth of several large biotechnology companies, the 2008 survey showed an increase in the number of respondents that have achieved annual product sales in excess of $100 million and an overall slight shift up in the categories from prior years (36% of the companies reported revenue in excess of $25 million in 2007 vs. just 13% in 2005). Great New Jersey success stories include Celgene Corporation whose revenue topped $1.4 billion in 2007, a 161% increase from 2005; Integra LifeSciences whose 2007 revenue was $550 million, an increase of 98% from 2005; and The Medicines Company whose revenue of $258 million in 2007 was an increase of 72% from 2005.

As a result of the mix of respondents in 2008, which included more early-stage companies, and given the growth in revenues of several larger biotechnology companies as compared to prior periods, the next several categories showed slight decreases in product revenue from the earlier surveys. The companies with product sales in excess of $100 million have been in New Jersey for over 10 years. However, given the fact that a significant number of the companies that responded are young: -- 27% are five years old or less and 54% are 10 years old or less -- the future revenue-generating potential of these companies is impressive. Overall 36% of the responding companies have already been successful in getting a product or service to market. This includes sales of therapeutics, diagnostics and other products or services.

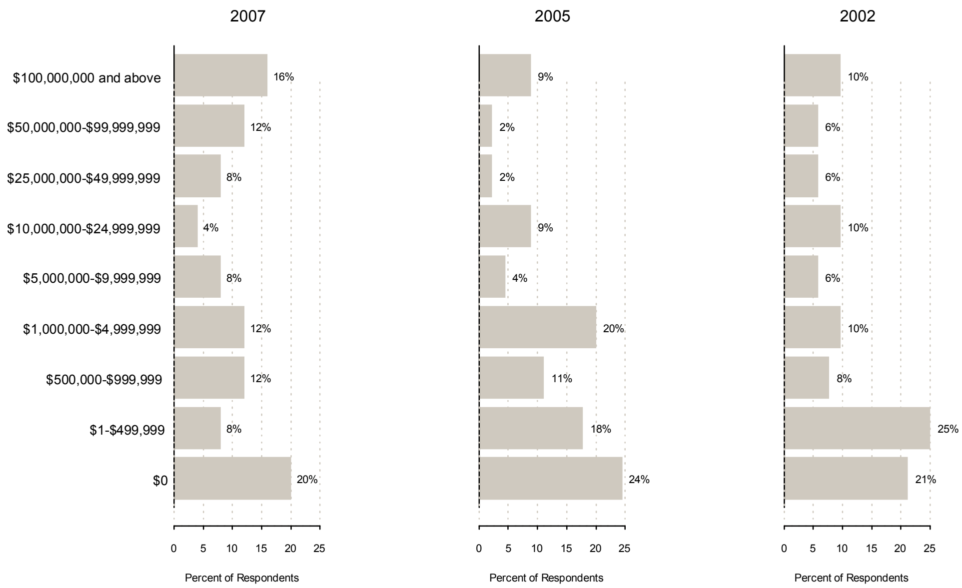
Please indicate your company's product sales for your most recent fiscal year-end.

Average percentage of company product sales generated in New Jersey - 2007: 20 % 2005: 63 % 2002: 42 %



Please indicate your company's annual revenue for your most recent fiscal year-end.

Average percentage of company annual revenue generated in New Jersey - 2007: 51 %   2005: 63 %   2002: 48 %

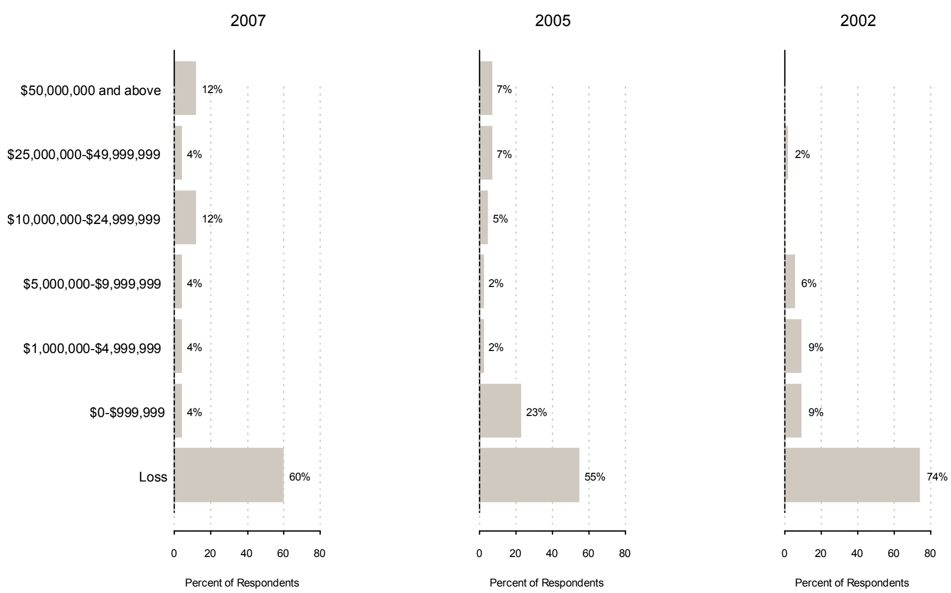


Approaching Profitability

There has been much discussion over the past several years as to when the biotechnology industry will turn profitable in the aggregate. The industry as a whole is as close to profitability as it has ever been, and the information from our New Jersey survey supports this. One of the more positive aspects of the 2008 survey is the increase in the number of respondents that have had overall improvement in their bottom line. Although the percentage of respondents reporting a loss varies year-by-year (that category is predominantly represented by the pre-commercial research and development companies), a clear demonstration of the maturity of the large biotech companies and their paths to profitability can be shown over the three-year periods presented.

Please indicate your company's net income (loss) for your most recent fiscal year-end.

Average percentage of company net income (loss) in New Jersey - 2007: 76 % 2005: 88 % 2002: 84 %

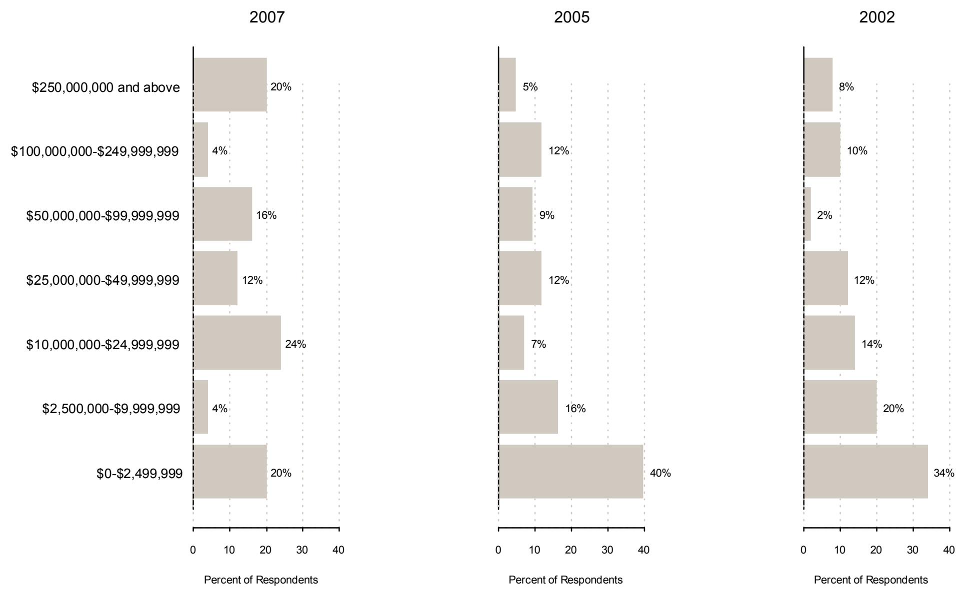


Increases in Total Assets

Our 2008 survey also indicated that the percentage of companies with total assets in excess of $25 million increased from 32% at December 31, 2002 to 38% at December 31, 2005 to 52% at December 31, 2007 and 40% of these companies had in excess of $50 million in total assets at December 31, 2007 compared with 26% at December 31, 2005. New Jersey public biotech companies have $9.2 billion in total assets, an increase of 163% since December 31, 2002.

Please indicate your company’s total assets for your most recent fiscal year-end.

Average percentage of company total assets in New Jersey - 2007: 69 % 2005: 88 % 2002: 76 %

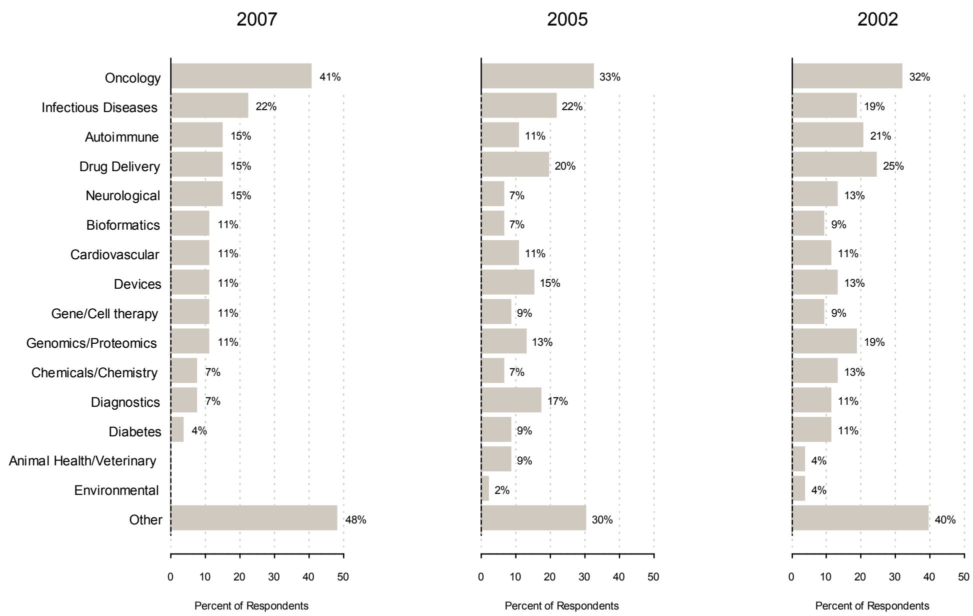


Broad Research Focus

New Jersey companies continue to have a broad focus. Oncology continues to be the largest single therapeutic focus in the State (with 41% in 2007, 33% in 2006 and 32% in 2003); however, many areas are being addressed by the New Jersey industry. “Other” includes Ophthalmology, Dermatology, Urology and Tissue companies as well as other areas.

How would you classify your company in terms of the focus of your work?

Multiple Answers Allowed

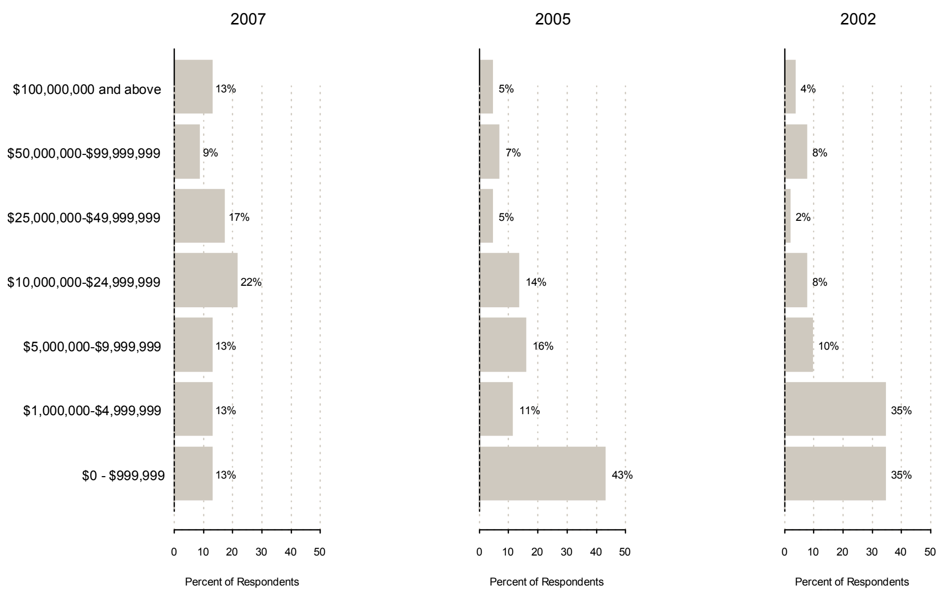


R&D Spending Increased

Another positive trend is the fact that in 2007, 74% of the responding New Jersey biotech companies spent in excess of $5 million on research and development, up from 47% in 2005. Additionally, 22% are spending in excess of $50 million, which is an increase from 12% in 2005. During 2007, the total New Jersey public biotech companies research and development spend (including purchased in-process research and development) was approximately $1.2 billion, which is an increase of $435 million as compared to the $737 million spent on research and development during 2005. The 2005 period saw a 40% increase in R&D spending by New Jersey public biotech companies over 2002 and a 171% increase over 2000. Of these R&D dollars spent by responding companies, approximately 61% of all spending occurred in New Jersey compared to 72% in the prior survey.

Please indicate your company's research and development expense for your most recent fiscal year-end.

Average percentage of company R&D expense spent in New Jersey - 2007: 61 % 2005: 72 % 2002: 70 %

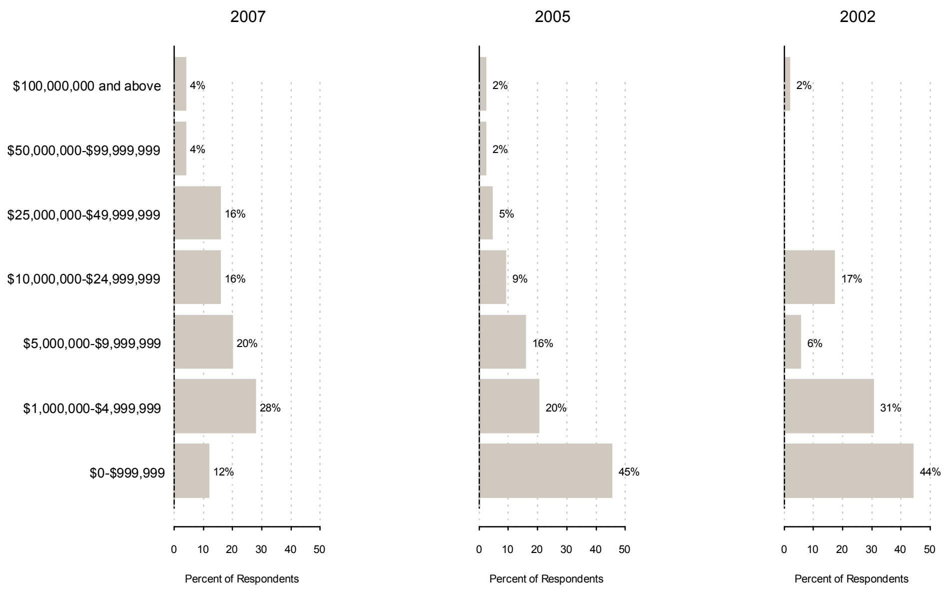


G&A Expenses Indicate Maturing of the Industry

The increase in dollars spent on general and administrative (G&A) expenses is an indication of the continuing maturity of the biotech industry in New Jersey. In 2007, 60% of the responding companies spent in excess of $5 million on G&A, compared to 35% in 2005 and 25% in 2002. Also due to the mix of companies in 2007 versus prior surveys, G&A expenses for 24% of the companies was in excess of $25 million compared to 9% in 2005 and 2% in 2002.

Please indicate your company's general and administrative costs for your most recent fiscal year-end.

Average percentage of company general and administrative costs in New Jersey - 2007: 80 % 2005: 91 % 2002: 82 %



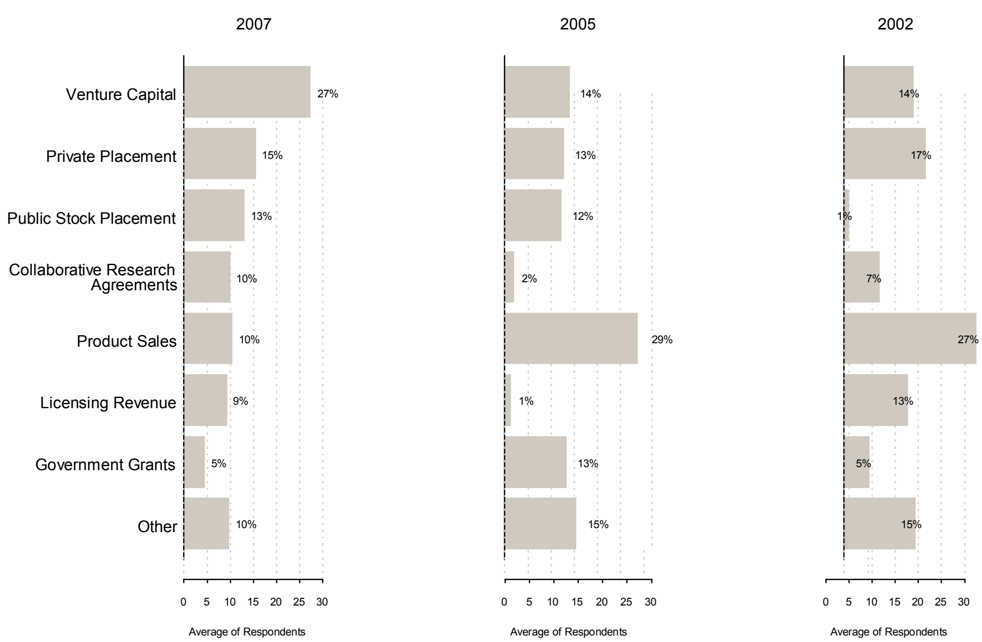
Financing Follows National Trends

The US biotechnology industry had another banner year and New Jersey was no exception. The total capital raised in 2007 represents a new record for the US industry, excluding the outlier genomics bubble year of 2000. The US biotechnology industry raised more than $21.3 billion and venture capital funding for the pre-commercial biotech companies was a significant financing option. To a great extent, the dramatic increase in venture funding is being driven by the large amounts of capital that venture funds are raising from their limited partners. In the bubble's aftermath, venture capitalists became more risk averse and moved to later-stage, product-focused companies. A similar trend occurred in alliances, as partners looked for surer bets and quicker payoffs as noted in the 2006 survey. However, in order to have a strong pipeline of the products of tomorrow, earlier-stage venture funding is essential to the health of the industry as a whole. New Jersey companies had a few follow-on offerings, but much less than prior years which is consistent with national trends. Some of the companies that raised capital through follow-ons included Cyclacel Pharmaceuticals, Inc. - $36 million, Pharmacopeia, Inc. - $35 million and Barrier Therapeutics, Inc. - $31.9 million. Some of the more significant venture rounds raised by New Jersey companies included $36 million raised by Ophthotech Corporation and $31 million raised by Tobira Therapeutics, Inc. Finally, convertible debt deals also continued to be popular led by Integra Life Sciences' $300 million deal and NPS Pharmaceuticals' $150 million deal.

The responding companies in this year's survey raised proportionately more capital from venture funds and continue to fund the majority of its cash flow from something other than product sales.

In 2007, 22 US biotech companies completed initial public offerings resulting in average proceeds of approximately $58 million. Of this total amount, two companies in New Jersey completed IPOs: Amicus Therapeutics, Inc. - $75 million, and Pharmasset, Inc. - $45 million. The dearth of IPO opportunities presents a challenge for biotech companies and their venture backers and many companies are planning for dual-track exit options with M&A becoming a more frequent option. M&A trends will be discussed later in this document.

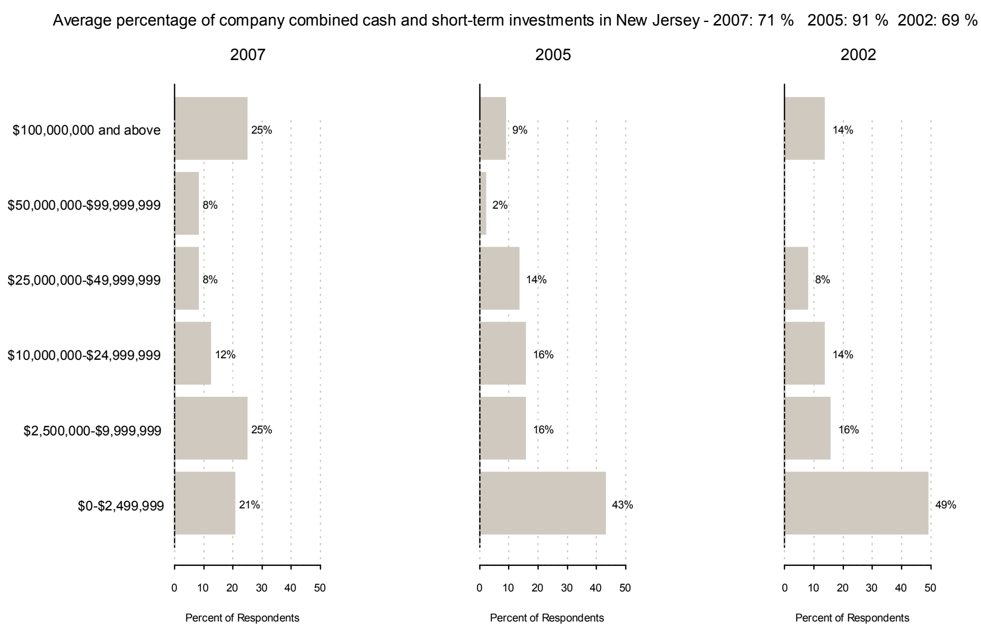
Please indicate the approximate percentage of your firm's cash flow derived from each of the following sources over the past year.



In prior years, we observed the evolution of creative financing transactions in the biotech industry. In one form or another, creative financings date back to the earliest days of the industry. As we observe the current tightening of the capital markets, creative financing arrangements focused on monetizing intellectual property assets to generate cash flows and fund pipeline development are expected to be more prevalent in the coming months, and perhaps years. The trend toward monetizing actual or “synthetic” royalty streams continued to gain momentum.

While the biotech industry raised record amounts of capital in 2007, New Jersey companies should expect that some financing segments will be less available in 2008. The following graphs show that New Jersey companies appear to be slightly better funded than the companies that responded to our last survey, however, there is still a significant need for financing of early stage companies. Approximately 46% of the respondents have less than $10 million of combined cash and cash equivalents at the end of their most recent fiscal year-end as compared to 59% and 65% during our two last surveys. This improvement is also a factor of the mix of companies in the survey with the 2008 survey including a higher percentage of public companies than in prior years.

Please indicate your company’s combined cash and short-term investments for your most recent fiscal year-end.



In 2007 New Jersey companies raised $605 million, a significant increase over 2005 when only $250 million was raised. In 2002, New Jersey companies raised $350 million. The major components of the 2007 activity are discussed under “Financing” above.

Mergers and Acquisitions

Mergers and acquisitions (“M&A”) are a healthy part of the biotech industry and a way for companies to address key strategic challenges or strengthen intellectual property and other related assets. The US industry set a new record for total value of M&A deals, principally due to the value of AstraZeneca’s acquisition of Medimmune. New Jersey was the headliner when Schering-Plough Corporation acquired Organon for $14 billion. However, it wasn’t only big pharma that played in the M&A game; mature biotech companies played an important role in this area as well. Celgene’s $2.7 billion acquisition of oncology-focused Pharmion Corporation was the third largest biotech M&A transaction announced in 2007. Also representing New Jersey was Ikaria’s $670 million acquisition of INO Therapeutics, GlaxoSmithKline’s $1.65 billion acquisition of Reliant Pharmaceuticals, Reckitt Benckiser’s $2.2 billion acquisition of Adams Respiratory Therapeutics and Allergan’s $370 million acquisition of Esprit Pharma. These 2007 acquisitions represented the second consecutive year of major transactions including New Jersey companies. In 2006 significant deals included Abbott’s acquisition of KOS Pharmaceuticals, Inc. for $3.7 billion, Merck’s acquisitions of Sirna Therapeutics, Inc. for $1.1 billion and GlycoFi for $400 million. All of these deals point to the fact that big pharma in New Jersey is showing strong interest in biotech companies and New Jersey is producing biotech companies with strong potential that are desirable to potential acquirers.

The convergence of the biotech and pharmaceutical industries will continue unabated in 2008 and the years beyond. We expect the majority of the M&A activities will occur between pharmaceutical/large biotech companies and innovative emerging companies that have broadly exploitable platform technologies or with biotech companies that have achieved clinical proof of concept of a product candidate. The negotiating power in these situations remains with the emerging company, so expect to see a continuation of high-deal valuations, more “true” risk sharing, and more rights retained by the biotech companies. This activity and consequent returns to shareholders are the fuel of the innovative engine, enabling the creation of new generations of biotech startups. This bodes well for New Jersey’s growing biotech industry.

Alliances and Collaborations

Alliances and collaborative agreements are also essential to product development and funding. Successful product development typically cannot be accomplished without strategic collaborative arrangements. Collaborative arrangements can accelerate drug development timelines while substantially reducing the costs of drug and device development. We are seeing life science companies entering into deals such as co-promotes, co-marketing, in-licensing, out-licensing, and revenue sharing that have greatly benefited life science companies.

For example, Amicus Therapeutics, Inc. announced in November 2007 a strategic collaboration with Shire Human Genetic Therapies, Inc., a subsidiary of Shire plc, to jointly develop Amicus' three lead pharmacological chaperone compounds for lysosomal storage disorders. Shire will receive rights to commercialize these products outside of the United States and Amicus retained all rights to commercialize these products in the United States. Under the terms of the deal, Amicus received an initial, non-refundable licensing payment of $50 million. Joint development costs toward global approval of the three compounds will be shared 50/50 going forward, and Amicus is eligible to receive an additional $150 million if certain clinical and regulatory milestones are met for the three programs through approvals. Amicus is also eligible to receive up to $240 million in sales-based milestones, as well as tiered double-digit royalties. Not including royalties and cost sharing, the deal is valued at up to $440 million.

The use of large upfront payments in strategic alliances — such as those seen in the Amicus deal —are one more indication of the increasing bargaining power that biotechs are bringing to the negotiating table. This is good news for biotech companies.

Regeneron proved the case that it's not only late-stage products or new generation platforms that can command the big bucks. In November the company entered into a broad collaboration with sanofi-aventis, with significant New Jersey operations, that grants sanofi rights to all future antibodies produced by its VelociSuite antibody production system. For this exclusivity, the deal is lighter on milestone-based payments, with sanofi committing significant sums upfront and over the term of the agreement. In the deal, Regeneron received $85 million upfront and will receive up to $475 million of research funding over the next five years, which represents a significant assumption of development risk from sanofi. Regeneron can earn up to $250 million of milestones based on ex-US sales levels. The companies will share the cost of development, but importantly, Regeneron pays for its share only from future profits (which are split evenly in the US). Also, sanofi increased its ownership of Regeneron to 19% through purchasing $312 million of common stock at a 45% premium. With a deep war chest, Regeneron is free from the need to return to the market to raise capital. Because of the exclusive nature of the agreement, Regeneron has largely established its future with sanofi, and the 19% ownership stake could keep other suitors for the company at bay. This is not the first go-around for these two, however, as the companies have an existing oncology-focused collaboration that dates from 2003.

Overall, a smaller number of respondents have entered into collaborative or licensing arrangements in the last year than in years past. However, this is likely due to the nature of the respondents from year to year with the percentage of respondents that are public companies increasing in 2007 by 23%. The reality is that the majority of late-stage, and promising early stage product candidates, already have partners either through collaboration or license. The reduction in total arrangements in the respondents is indicative of the overall maturity level of the industry. The need for big pharma to fill its weakening product pipeline and the intense competitive pressures to collaborate with promising new drugs means that there isn't as much today in these stages of development compared to previous surveys. Considering that the industry is poised to continue to innovate and develop new novel technologies and further considering that the larger pharmaceutical companies will continue to have an appetite to participate in this innovation, financing through collaboration and licensing should continue to grow. Based on the survey results, New Jersey companies are positioned to continue to get their fair share of the partnering opportunities available to the industry.

Why Are Companies Choosing New Jersey?

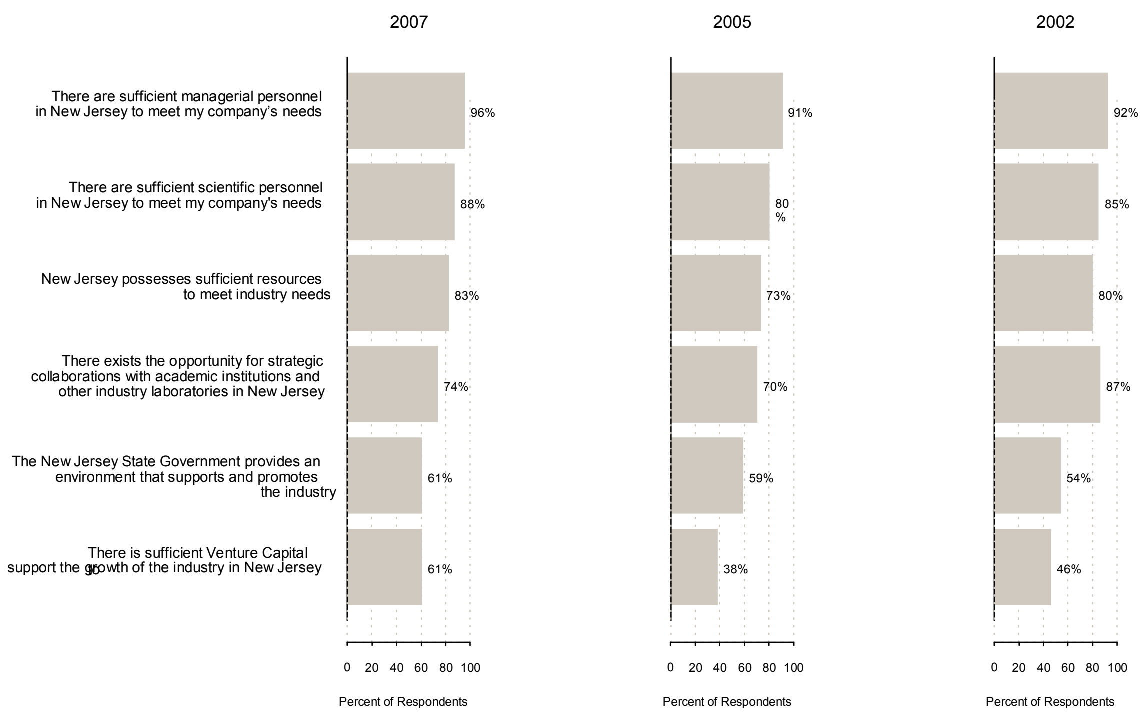
The respondents to the survey highlighted many reasons for locating their companies in New Jersey. Ninety-six percent of the companies responding to the survey indicated that there are sufficient managerial personnel and 88% believe that there are sufficient scientific personnel to meet their company's needs in the State. Both percentages increased as a percentage of respondents as compared to the prior surveys.

Although not the highest percentage since we began compiling this survey in 2003, 74% of the respondents believed that there exists the opportunity for strategic collaborations with academic institutions and other industry laboratories in New Jersey.

Sixty-one percent of the respondents also indicated that New Jersey State Government provides an environment that supports and promotes the industry; this percentage has increased each year we have completed this survey. This was attributed to the Business Tax Certificate Transfer Program to sell net operating losses (NOLs), the business incubators and the significant increase in the percentage of respondents who believe that there is sufficient Venture Capital to support the growth of the industry in New Jersey. This includes such programs as the Garden State Life Sciences Venture Fund, a program that was proposed to State Government by BioNJ.

Do you agree with the following statements?

Percentages represent respondents that agree with the statement

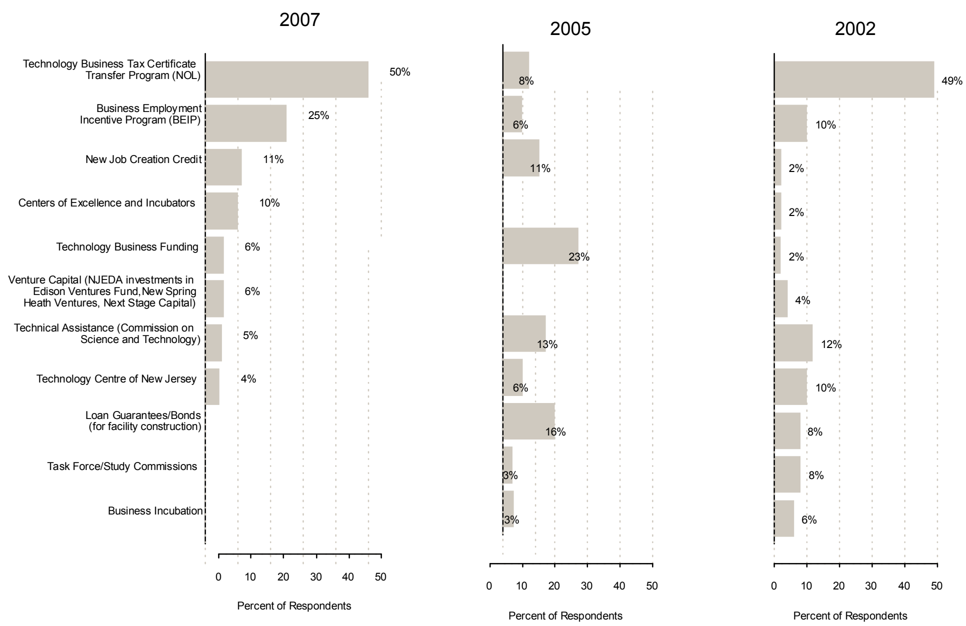


Interestingly, the responses were very consistent, regardless of level of revenue at the company.

State Programs

In order to attract life science companies, the New Jersey State Government has established many programs to help lower the cost of doing business in the State. The following is a summary of programs in place as of December 31, 2007. The most widely-used program is the Business Tax Certificate Transfer net operating loss program. In 2007, biotech companies sold $27.3 million of losses in this program, representing 45.5 percent of the total approved by the State for that year. This was an average of $781,000 per company. In the last five years biotech companies have sold over $120 million of losses. For early-stage New Jersey companies, this is a significant source of funding to help keep operations moving forward.

Has your company participated in any of the following programs or projects offered by the State of New Jersey?

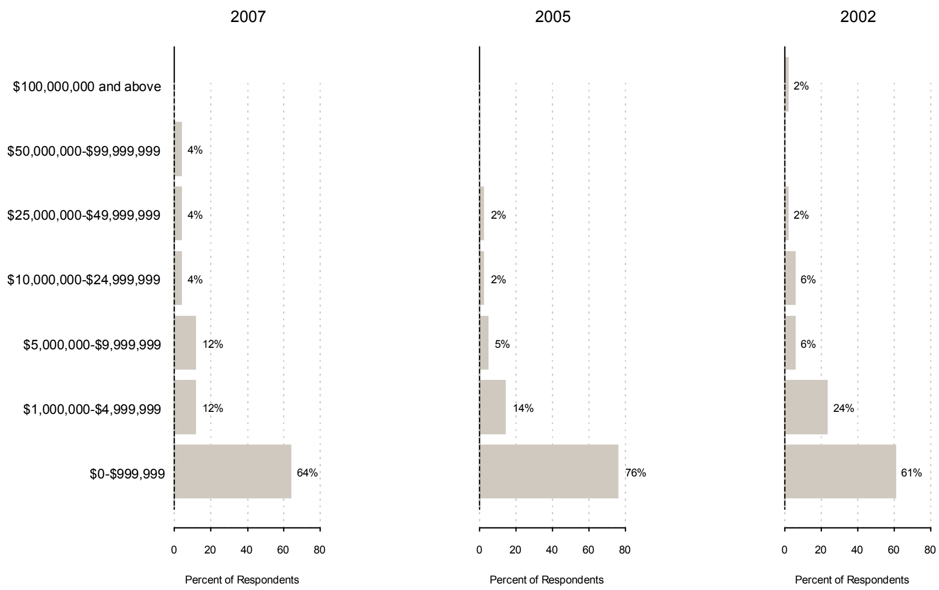


Capital Expenditures

The respondents also showed several other positive characteristics that point toward a positive future for biotech in New Jersey. In the area of capital expenditures, 75% of the funds spent in 2007 by responding companies were spent in New Jersey. Also 77% of the mortgage, rental or lease payments were made in New Jersey.

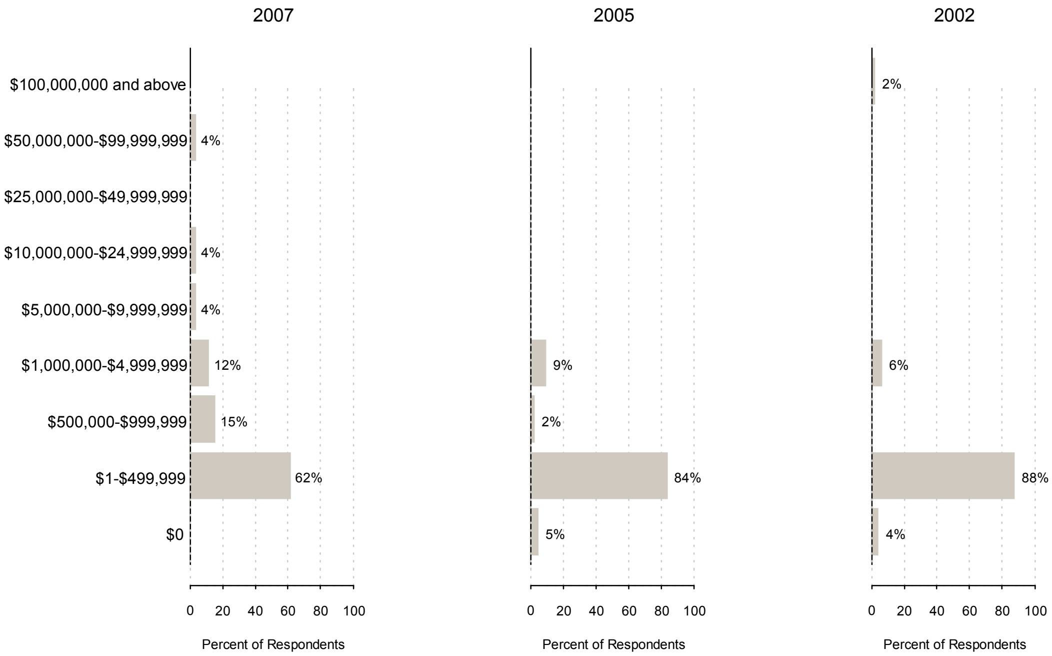
Please indicate your company's capital expenditures for your most recent fiscal year-end.

Average percentage of company capital expenditure in New Jersey - 2007: 75 %   2005: 85 % 2002: 74 %



Please indicate your company's monthly mortgage or rental/leasing expense for your most recent fiscal year-end.

Average percentage of company monthly mortgage or rental/lease expenses in New Jersey - 2007: 77 % 2005: 92 % 2002: 82 %



Conclusion

New Jersey's life science industry continues to grow and mature. As the financing environment around the U.S. continues to be strong (despite a weak IPO market), New Jersey companies continue to fight for their fair share. The improvement in the bottom line indicates the continuing maturity of the industry in the State. The economic and scientific environment indicates that there are many more bright years ahead for biotechnology in New Jersey and nationwide. With the significant presence of big pharma in New Jersey and the wealth of scientific talent available in the area to continue research and development of life science technology as well as the attention the industry is getting from New Jersey State Government, the future in New Jersey continues to be bright.

About BioNJ

With more than 200 member companies, BioNJ (formerly the Biotechnology Council of New Jersey) is singularly focused on the growth and prosperity of New Jersey's rapidly expanding biotechnology cluster.

Founded in 1994 by New Jersey biotechnology industry CEOs, BioNJ serves as the voice of biotechnology companies located in New Jersey, seeks to advance their economic growth and development and works to encourage new and established companies from around the world to locate to New Jersey. BioNJ represents companies engaged in biopharmaceutical, biomedical, bioagricultural and bioremedial endeavors.

The goals and objectives of BioNJ flow from its mission statement:

- To formulate and advocate policy positions to elected State and Federal representatives and other government officials.
- To acquire and coordinate resources and provide services to members regarding issues critical to building successful biotechnology enterprises.
- To enhance awareness and appreciation of New Jersey's biotechnology industry.

For more information, visit the BioNJ Web site at www.BioNJ.org.

SPECIAL NOTE:

BioNJ also publishes a detailed summary, ***New Jersey Resources,*** that provides information on State incentives and other business development programs that are available to biotechnology companies. For a copy of ***New Jersey Resources,*** please go to http://bionj.com/pdf/nj_offerings_062508.pdf

About Ernst & Young

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E&Y has a long standing commitment to the life sciences industry serving more than 50% of the public life science companies; we are the largest professional services practice serving the industry. Our life sciences practice includes biotech, medical device, generic pharmaceutical, and specialty pharmaceutical companies. Our size and success has allowed us to make enormous investments in research and keep our professionals current on the evolving issues and trends facing the industry today and what is most likely to affect the life sciences industry moving into the future. Industry focus means we recruit, train and reward our professionals within the context of industry specialization. We develop technologies and processes that are guided by industry consideration

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