

Pfenex Inc.

Second-Quarter Earnings Highlighted by Active Clinical Pipeline and Business Update

After the markets closed on Friday, August 29, Pfenex reported its first quarterly results since its initial public offering and provided an update on clinical programs. While the financial results were uneventful, the company reiterated the clinical development timeline, highlighted by a Phase III initiation and several new compounds entering clinical testing within the next 12-18 months. Exhibit 1 provides a detailed variance analysis of the company's operating results compared with our financial estimates.

- **Pfenex's lead product candidate, PF582, is a biosimilar form of the \$4.3 billion drug Lucentis and has an expanding development pipeline.** PF582 is the wholly owned, lead compound at Pfenex. We expect Phase Ib/IIa data later this year and project the company to advance the product candidate into a registration-enabling trial in 2015. We estimate that by 2018, roughly \$530 million in current sales volume of Lucentis will come off patent, and by 2020, we predict that figure will increase by an additional \$2.0 billion with patent expiry in the United States. In our view, the development timelines of the Phase III trial align nicely with the patent expiration schedule for Lucentis, which we believe is an attractive reference drug given the sizable market it addresses and challenging manufacturing profile.
- **Behind PF582 is a portfolio of wholly owned and partnered development initiatives with three compounds entering clinical testing this year.** We view the coming 12-18 months as extremely formative for Pfenex, with the potential for clinical data from multiple products and additional corporate and government collaborations, which could infuse nondilutive capital into the company as well as material increases in the level of awareness of the biosimilar commercial opportunity. We highlight PF530, a biosimilar form of Betaseron for the treatment of multiple sclerosis, which is expected to advance into clinical studies later this year, with Phase I data expected in the first half of 2015. We believe the activity surrounding the company's portfolio will present significant catalysts over the next two years, which we summarize in exhibit 3.
- **Pfenex has roughly \$50 million in capital, which we believe will sustain the company for at least 18-24 months, based on our current burn rate estimates.** With an estimated enterprise value of about \$75 million and numerous upcoming catalysts that stand to increase value, we believe that current price levels represent an attractive entry point for investors. We therefore maintain our Outperform rating on Pfenex shares.

Please see the following pages for more details.

Pfenex is a San Diego-based biotechnology company focused on biosimilars and difficult-to-manufacture protein-based therapeutics. The lead product candidate, PF582, a biosimilar to Lucentis (ranibizumab), is in Phase I/II study with data expected later this year.

John Sonnier
+1 312 364 8224
jsonnier@williamblair.com

Andy T. Hsieh, Ph.D.
+1 312 364 5051
ahsieh@williamblair.com

Please consult pages 5-6 of this report for all disclosures. Analyst certification is on page 5. William Blair & Company, L.L.C. does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as a single factor in making an investment decision.

September 03, 2014

Stock Rating: **Outperform**
Company Profile: **Aggressive Growth**

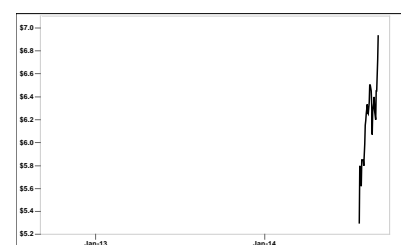
Symbol: PFNX (NYSE)
Price: \$6.94 (52-Wk.: \$5-\$7)
Market Value (mil.): \$137
Fiscal Year End: December
Long-Term EPS Growth Rate: NA
Dividend/Yield: None

	2013A	2014E	2015E
Estimates			
EPS FY	-\$3.76	-\$3.41	-\$1.01
CY		-\$3.41	-\$1.01
Valuation			
FY P/E	NM	NM	NM
CY P/E		NM	NM

Trading Data (FactSet)	
Shares Outstanding (mil.)	2
Float (mil.)	9
Average Daily Volume	134,590

Financial Data (FactSet)	
Long-Term Debt/Total Capital (MRQ)	0.0
Book Value Per Share (MRQ)	-62.9
Return on Equity (TTM)	-19.6

Two-Year Price Performance Chart



Sources: FactSet and William Blair estimates

Portfolio Manager Summary

After the markets closed on Friday, August 29, Pfenex reported second-quarter financial results and provided an update on clinical programs. While the financial results were uneventful, the company reiterated the clinical development timeline, highlighted by a Phase III initiation and several new compounds entering clinical testing within the next 12-18 months. Exhibit 1 provides a detailed variance analysis of the company's operating results compared with our financial estimates. We updated our financial projections to come more in line with operating trends (exhibit 2). In addition, we expect an active news calendar for Pfenex in the next two years, which we highlight in exhibit 3.

Exhibit 1 Pfenex Inc. Second Quarter 2014 Variance Analysis (dollars in millions except EPS)

	PFNX Q2 2014A	WB Q2 2014E
Total Revenues	\$3	\$2
COGS	\$3	\$2
SG&A	\$2	\$2
R&D	\$1	\$1
Net Loss	(\$2)	(\$3)
EPS	(\$1.67)	(\$1.90)

Sources: Pfenex reports and William Blair & Company, L.L.C. estimates.

Exhibit 2 Pfenex Inc. Guidance and Estimates (dollars in millions except EPS)

	WB Previous 2014E	WB Revised 2014E	WB Previous 2015E	WB Revised 2015E	WB Previous 2016E	WB Revised 2016E
Total Revenues	\$8	\$9	\$8	\$8	\$8	\$8
COGS	\$7	\$8	\$8	\$8	\$9	\$9
SG&A	\$8	\$9	\$8	\$8	\$9	\$9
R&D	\$7	\$6	\$14	\$14	\$18	\$18
Net Loss	(\$13)	(\$13)	(\$20)	(\$21)	(\$26)	(\$28)
EPS	(\$3.31)	(\$3.41)	(\$0.93)	(\$1.01)	(\$0.94)	(\$1.01)

Sources: Pfenex reports and William Blair & Company, L.L.C. estimates.

Exhibit 3
Pfenex Inc.
Timeline

Date	Product	Event
2014	PF530 (biosimilar Betaseron)	Phase I trial initiation in relapsing forms of MS (2H).
	PF582 (biosimilar Lucentis)	Phase Ib/IIa trial completion in wet age-related macular degeneration (4Q).
	Recombinant Anthrax Vaccine	Phase Ia trial initiation in anthrax (2H).
	Recombinant Malaria Vaccine	Phase I trial initiation in malaria (2H).
2015	PF530 (biosimilar Betaseron)	Phase I trial results in relapsing forms of multiple sclerosis (1H).
	PF582 (biosimilar Lucentis)	Phase III equivalence trial in wet age-related macular degeneration (3Q).
	PF708 (generic Forteo)	ANDA-enabling pharmacokinetic bioequivalence trial initiation in osteoporosis (2H).
	Recombinant Malaria Vaccine	Phase I trial results in malaria.
2016	PF688 (biosimilar Cimzia)	Phase I trial initiation in Crohn's disease and rheumatoid arthritis.
	Recombinant Anthrax Vaccine	Phase Ia trial results in anthrax (3Q).
2017	PF582 (biosimilar Lucentis)	Phase III trial results in age-related macular degeneration.

ANDA = abbreviated new drug application.

Sources: Pfenex reports.

Valuation

Pfenex is trading at \$6.94 with a market cap of \$141 million, which we believe represents an attractive value at current price levels. Given the breadth of the clinical pipeline and an active news calendar in the next two years, we see significant room for upside potential in Pfenex shares.

Risks

While we view Pfenex as a well-capitalized company with a modest clinical risk profile, numerous risks remain given that the company's product candidates are biosimilars of commercialized drugs. The major clinical risk is the emergence of unexpected adverse events from compounds generated from Pfenex's proprietary manufacturing platform. The major capital risk is that additional infusions of funding are needed before the company can reach profitability, which might include further equity fundraising. The major regulatory risk is that PF582 could face scrutiny before approval. However, given the comprehensive bioanalytical testing completed by Pfenex, we believe the asset is de-risked, and we remain optimistic about the compound's path forward.

Exhibit 4
Pfenex Inc.
Income Statement

(dollars in thousands except EPS and shares in thousands)

	2013A	Q1A	Q2A	Q3E	Q4E	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E
Revenue	11,914	2,558	3,266	1,800	1,850	9,474	8,200	8,200	8,200	8,200	8,200	9,150	9,550
PF582	0	0	0	0	0	0	0	0	0	6,327	46,812	140,838	373,953
Total revenues	\$11,914	\$2,558	\$3,266	\$1,800	\$1,850	\$9,474	\$8,200	\$8,200	\$8,200	\$14,527	\$55,012	\$149,988	\$383,503
Cost of revenue	6,423	1,908	2,544	1,500	1,550	7,502	8,000	9,000	10,000	10,000	25,285	77,537	220,000
Gross profit	5,491	650	722	300	300	1,972	200	(800)	(1,800)	4,527	29,727	72,451	163,503
SG&A	6,698	1,495	2,024	3,050	2,150	8,719	8,000	9,000	10,000	14,500	20,300	41,000	48,000
R&D	5,490	678	860	2,350	2,450	6,338	13,500	17,800	18,135	18,550	19,650	20,575	21,100
Total operating expenses	12,188	2,173	2,884	5,400	4,600	15,057	21,500	26,800	28,135	33,050	39,950	61,575	69,100
Loss from operations	(\$6,697)	(\$1,523)	(\$2,162)	(\$5,100)	(\$4,300)	(\$13,085)	(\$21,300)	(\$27,600)	(\$29,935)	(\$28,523)	(\$10,223)	\$10,876	\$94,403
Other expense, net	(36.0)	(18.0)	(21.0)	(8.5)	(8.5)	(56.0)	(32.0)	(30.0)	(28.0)	(26.0)	(24.0)	(22.0)	(20.0)
Net loss before income taxes	(6,733)	(\$1,541)	(\$2,183)	(\$5,109)	(\$4,309)	(13,141)	(21,332)	(27,630)	(29,963)	(28,549)	(10,247)	10,854	94,383
Income tax benefit	2,671	(1)	0	0	0	(1)	0	0	0	0	0	(2,538)	(14,157)
Net loss	(\$4,062)	(\$1,542)	(\$2,183)	(\$5,109)	(\$4,309)	(\$13,142)	(\$21,332)	(\$27,630)	(\$29,963)	(\$28,549)	(\$10,247)	\$8,315	\$80,226
Net loss attributable to common stockholders	(5,757)	(1,977)	(2,630)	(5,109)	(4,309)	(14,024)	(21,332)	(27,630)	(29,963)	(28,549)	(10,247)	8,315	80,226
Net loss per common share basic and diluted	(\$3.76)	(\$1.28)	(\$1.67)	(\$0.25)	(\$0.21)	(\$3.41)	(\$1.01)	(\$1.01)	(\$1.05)	(\$0.96)	(\$0.33)	\$0.25	\$2.40
Weighted-average common shares basic and diluted	1,531	1,548	1,571	20,500	20,702	11,080	21,217	27,432	28,529	29,670	30,856	32,090	33,373

William Blair & Company, L.L.C. does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report.

Investors should consider this report as a single factor in making an investment decision.

Please consult the last page of this report for all disclosures.

PFNX

Sources: Roche and Pfenex reports.

William Blair & Company, L.L.C.

IMPORTANT DISCLOSURES

William Blair was a manager or co-manager of a public offering of equity securities for Pfenex Inc. within the prior 12 months.

William Blair is a market maker in the security of Pfenex Inc. and may have a long or short position.

William Blair intends to seek investment banking compensation in the next three months from Pfenex Inc.

Within the past 12 months William Blair has provided or is providing investment banking services to or has an investment services relationship with Pfenex Inc.

Additional information is available upon request.

This report is available in electronic form to registered users via R*Docs™ at www.rdocs.com or www.williamblair.com.

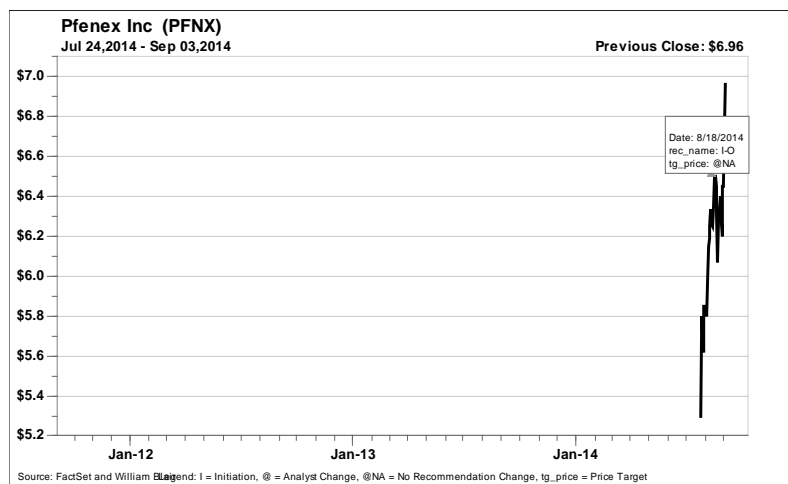
Please contact us at +1 800 621 0687 or consult williamblair.com/Research-and-Insights/Equity-Research/Coverage.aspx for all disclosures.

John Sonnier attests that 1) all of the views expressed in this research report accurately reflect his/her personal views about any and all of the securities and companies covered by this report, and 2) no part of his/her compensation was, is, or will be related, directly or indirectly, to the specific recommendations or views expressed by him/her in this report. We seek to update our research as appropriate, but various regulations may prohibit us from doing so. Other than certain periodical industry reports, the majority of reports are published at irregular intervals as deemed appropriate by the analyst.

DOW JONES: 17,067.56

S&P 500: 2,002.28

NASDAQ: 4,598.19



Current Rating Distribution (as of 08/31/14)

Coverage Universe	Percent	Inv. Banking Relationships*	Percent
Outperform (Buy)	66	Outperform (Buy)	16
Market Perform (Hold)	31	Market Perform (Hold)	3
Underperform (Sell)	1	Underperform (Sell)	0

*Percentage of companies in each rating category that are investment banking clients, defined as companies for which William Blair has received compensation for investment banking services within the past 12 months.

The compensation of the research analyst is based on a variety of factors, including performance of his or her stock recommendations; contributions to all of the firm's departments, including asset management, corporate finance, institutional sales, and retail brokerage; firm profitability; and competitive factors.

OTHER IMPORTANT DISCLOSURES

Stock ratings, price targets, and valuation methodologies: William Blair & Company, L.L.C. uses a three-point system to rate stocks. Individual ratings and price targets (where used) reflect the expected performance of the stock relative to the broader market (generally the S&P 500, unless otherwise indicated) over the next 12 months. The assessment of expected performance is a function of near-, intermediate-, and long-term

company fundamentals, industry outlook, confidence in earnings estimates, valuation (and our valuation methodology), and other factors. Outperform (O) – stock expected to outperform the broader market over the next 12 months; Market Perform (M) – stock expected to perform approximately in line with the broader market over the next 12 months; Underperform (U) – stock expected to underperform the broader market over the next 12 months; not rated (NR) – the stock is not currently rated. The valuation methodologies used to determine price targets (where used) include (but are not limited to) price-to-earnings multiple (P/E), relative P/E (compared with the relevant market), P/E-to-growth-rate (PEG) ratio, market capitalization/revenue multiple, enterprise value/EBITDA ratio, discounted cash flow, and others.

Company Profile: The William Blair research philosophy is focused on quality growth companies. Growth companies by their nature tend to be more volatile than the overall stock market. Company profile is a fundamental assessment, over a longer-term horizon, of the business risk of the company relative to the broader William Blair universe. Factors assessed include: 1) durability and strength of franchise (management strength and track record, market leadership, distinctive capabilities); 2) financial profile (earnings growth rate/consistency, cash flow generation, return on investment, balance sheet, accounting); 3) other factors such as sector or industry conditions, economic environment, confidence in long-term growth prospects, etc. Established Growth (E) – Fundamental risk is lower relative to the broader William Blair universe; Core Growth (C) – Fundamental risk is approximately in line with the broader William Blair universe; Aggressive Growth (A) – Fundamental risk is higher relative to the broader William Blair universe.

The ratings, price targets (where used), valuation methodologies, and company profile assessments reflect the opinion of the individual analyst and are subject to change at any time.

Our salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies—to our clients and our trading desks—that are contrary to opinions expressed in this research. Certain outstanding reports may contain discussions or investment opinions relating to securities, financial instruments and/or issuers that are no longer current. Always refer to the most recent report on a company or issuer before making an investment decision. Our asset management and trading desks may make investment decisions that are inconsistent with recommendations or views expressed in this report. We will from time to time have long or short positions in, act as principal in, and buy or sell the securities referred to in this report. Our research is disseminated primarily electronically, and in some instances in printed form. Electronic research is simultaneously available to all clients. This research is for our clients only. No part of this material may be copied or duplicated in any form by any means or redistributed without the prior written consent of William Blair & Company, L.L.C.

THIS IS NOT IN ANY SENSE A SOLICITATION OR OFFER OF THE PURCHASE OR SALE OF SECURITIES. THE FACTUAL STATEMENTS HEREIN HAVE BEEN TAKEN FROM SOURCES WE BELIEVE TO BE RELIABLE, BUT SUCH STATEMENTS ARE MADE WITHOUT ANY REPRESENTATION AS TO ACCURACY OR COMPLETENESS OR OTHERWISE. OPINIONS EXPRESSED ARE OUR OWN UNLESS OTHERWISE STATED. PRICES SHOWN ARE APPROXIMATE.

THIS MATERIAL HAS BEEN APPROVED FOR DISTRIBUTION IN THE UNITED KINGDOM BY WILLIAM BLAIR INTERNATIONAL, LIMITED, REGULATED BY THE FINANCIAL CONDUCT AUTHORITY (FCA), AND IS DIRECTED ONLY AT, AND IS ONLY MADE AVAILABLE TO, PERSONS FALLING WITHIN COB 3.5 AND 3.6 OF THE FCA HANDBOOK (BEING “ELIGIBLE COUNTERPARTIES” AND “PROFESSIONAL CLIENTS”). THIS DOCUMENT IS NOT TO BE DISTRIBUTED OR PASSED ON TO ANY “RETAIL CLIENTS.” NO PERSONS OTHER THAN PERSONS TO WHOM THIS DOCUMENT IS DIRECTED SHOULD RELY ON IT OR ITS CONTENTS OR USE IT AS THE BASIS TO MAKE AN INVESTMENT DECISION.

“William Blair” and “R*Docs” are registered trademarks of William Blair & Company, L.L.C. Copyright 2014, William Blair & Company, L.L.C. All rights reserved.