

## Equity Research

### Five Prime Therapeutics, Inc.

FPRX:Q2--Pipeline Progressing--Immuno-Oncology Platform Emerging

• **Summary:** On 8/5, FPRX announced Q2 2014 results that were generally in line with expectations, with the clinical programs moving ahead on track and the company's potentially intriguing initiatives in immuno-oncology beginning to emerge. We continue to believe FPRX is well-positioned to leverage its differentiated platform to discover novel targets in cancer and inflammation and be on the forefront of immuno-oncology discovery, which we believe will generate long-term value. Adjusting 2014E/2015E EPS to -\$1.65/- \$1.16 from -\$1.71/- \$1.15.

• **Financials:** FPRX reported Q2 2014 revenue of \$5MM including recognition of \$1.9MM from the BMS collaboration. R&D expense of \$11.9MM was somewhat higher than we had expected, primarily due to \$1.5MM milestone payment to Galaxy Biotech related to FPA144 development progress. SG&A was \$3MM, slightly lower than our \$3.3MM. They maintained their 2014 cash burn guidance of \$30MM and expect to end the year with ~\$100MM in cash. They ended Q2 with \$141MM in cash and equivalents.

• **'008 emerging as intriguing asset for a variety of potential inflammation and cancer indication.** The company is continuing to make progress with '008, announcing that the ph.I multiple ascending dose study completed enrollment during Q2 2014; they expect to report safety, PK/PD, and biomarker data by Q4, which will guide dosing and start of the RA study by year-end. Notably, the company said initial biomarker data supports their hypothesis, which we believe suggests they may be inhibiting inflammatory monocytes at acceptably safe doses. The company will announce a second indication for '008 by the end of the year. With more literature published and with new data in cancer/immuno-oncology from competitors continue to emerge both clinically and preclinically--providing strong scientific rationale for CSF1R as a bona fide immune-oncology target-- we believe there is particularly compelling rationale for '008 to be studied in combination with checkpoint inhibitors, though there is also a scientific basis for targeting CSF1R in other diseases such as fibrosis and PVNS.

• **'1039 moving forward on track, with initial data year-end.** FPRX's partner GSK is actively moving forward '1039, with patients continuing to accrue in all 3 arms and interim data from arms A and B in NSCLC, which should provide a read on safety and ability to inhibit the pathway more robustly compared to small molecules, expected by year-end; arm C in mesothelioma is continuing to enroll patients, and while it is too early to predict data timing, FPRX noted high investigator enthusiasm. *(Continued on the next page)*

#### Valuation Range: \$19.00 to \$21.00

Our valuation range is based on applying a 30x multiple to our 2023 estimated EPS and discounting at 15%, blended with 2.5x multiple of 2023 estimated sales, and discounting 10-12%, plus \$6 for technology/pipeline value. Key risks, in our view, are clinical and regulatory failure of its programs, competition, and financing.

#### Investment Thesis:

We believe Five Prime's technology platform and biologics stemming from it will drive long-term value.

**Please see page 5 for rating definitions, important disclosures and required analyst certifications**

**All estimates/forecasts are as of 08/06/14 unless otherwise stated.**

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## Outperform / V

Sector: Biotechnology

Market Weight

### Earnings Estimates Revised Up

EPS	2013A	2014E		2015E	
		Curr.	Prior	Curr.	Prior
Q1 (Mar.)	NE	(\$0.46) A	NC	NE	
Q2 (June)	NE	<b>(0.46) A</b>	<b>(0.41)</b>	NE	
Q3 (Sep.)	(2.74)	<b>(0.37)</b>	<b>(0.42)</b>	NE	
Q4 (Dec.)	(0.43)	<b>(0.37)</b>	<b>(0.42)</b>	NE	
FY	(\$5.26)	<b>(\$1.65)</b>	<b>(1.71)</b>	<b>(\$1.16)</b>	<b>(1.15)</b>
CY	(\$5.26)	(\$1.65)		(\$1.16)	
FY P/EPS	NM	NM		NM	
Rev.(MM)	\$14	\$19		\$30	

Source: Company Data, Wells Fargo Securities, LLC estimates, and Reuters  
NA = Not Available, NC = No Change, NE = No Estimate, NM = Not Meaningful  
V = Volatile, \* = Company is on the Priority Stock List

Ticker	FPRX
Price (08/05/2014)	\$12.38
52-Week Range:	\$8-24
Shares Outstanding: (MM)	16.8
Market Cap.: (MM)	\$208.0
S&P 500:	1,920.21
Avg. Daily Vol.:	186,319
Dividend/Yield:	\$0.00/0.0%
LT Debt: (MM)	\$0.0
LT Debt/Total Cap.:	0.0%
ROE:	NM
3-5 Yr. Est. Growth Rate:	NM
CY 2014 Est. P/EPS-to-Growth:	NM
Last Reporting Date:	08/05/2014
	After Close

Source: Company Data, Wells Fargo Securities, LLC estimates, and Reuters

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Together we'll go far



**Company Description:**

Five Prime Therapeutics (FPRX), Inc., headquartered in South San Francisco, California, is a biotechnology company focused on discovering and developing protein therapeutic candidates based on its extensive library of 5,600+ extracellular proteins, including ligands and receptors. Its lead development candidate is FP-1039 [ph.I(b)], an FGFR1-targeted ligand trap in development for solid tumors and partnered with GlaxoSmithKline. Behind '1039, its unpartnered pipeline includes FPA008 (ph.I) a monoclonal antibody in development for inflammatory diseases (e.g., rheumatoid arthritis), and FPA144 (preclinical), an antibody for gastric cancer. Beyond its three lead programs, Five Prime has discovery collaborations with GSK for muscle diseases (sarcopenia and cachexia) and respiratory diseases (refractory asthma and COPD) and UCB Pharma for fibrotic-related immunologic and CNS diseases.

**Continued from front page**

- **Antibody development to begin for first proprietary immuno-oncology target.** The company announced that they have zeroed in on their first immune-oncology target to develop a monoclonal antagonist in collaboration with Adimab; they did not disclose the target for competitive reasons, but as this program matures, we believe there will be an increasing appreciation for the applicability of FPRX's discovery efforts towards developing novel immuno-oncology targets.

**Upcoming Milestones**

Product	Event	Timeline
FP-1039	Top-line results from ph.Ib study (Arm A and B)	end-2014
	Potential pre-ph.IIb study meeting with FDA	2H14/1H15
	Consider initiating ph.II/III randomized study of SOC +/-1039 in NSCLC	2015
	Explore studies in other cancer indications (GIST, GBM, RCC, HCC)	2014/2015
FPA008	Ph.I top-line PK and safety results	end-2014
	Expand ph.I study to include RA patients	2H14
	Introduce SC formulation	2H14/2015
	File IND, initiate ph.II study likely in biologics failures	2015
	Explore other inflammatory diseases (IPF, lupus nephritis, etc.)	2015
FPA144	Announce second indication	end-2014
	File IND	4Q14
	Initiate ph.I study	end-2014
	Top-line ph.I results	2015

Source: Company reports and Wells Fargo Securities, LLC estimates

**Product Pipeline**

Product (partner)	Indication/mechanism	Status
FP-1039 (GSK)	Oncology (multiple solid tumors); FGF Ligand Trap	Phase Ib
FPA008	Autoimmune disease (cancer?); CSF1R antibody	Entering phase I
FPA144	Gastric cancer; FGFR2b antibody	Pre-IND
GSK	Muscle wasting (sarcopenia and cachexia), respiratory (refractory asthma and COPD)	Discovery
UCB	Fibrosis, immunologic, and CNS diseases	Discovery
Multiple candidates	Antibodies and ligand traps vs. cancer, immunotherapy, steroid resistant asthma	Discovery

Source: Company reports and Wells Fargo Securities, LLC

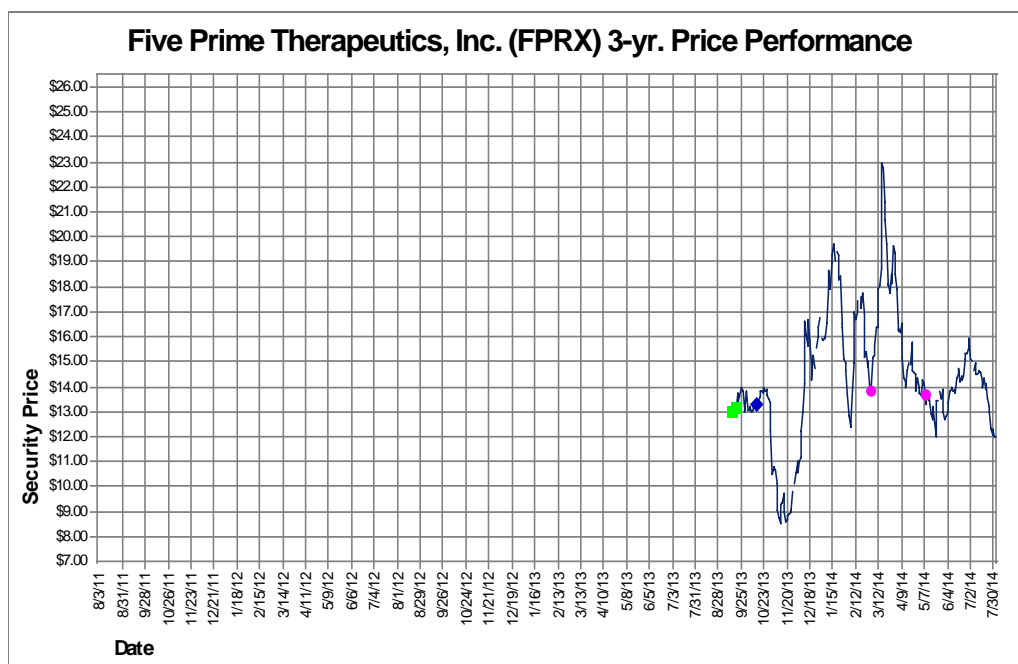
**Five Prime Therapeutics (FPRX)**  
Statement of Operations (Income Statement)

(In thousands except per share amounts)

	2010A	2011A	2012A	2013A	1QA	2QA	3QE	4QE	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E
<b>Revenues</b>																		
Total Global FP-1039 sales (15-35% prob-weighted by tumor type)																		
Total Global FPA008 sales (20% prob-weighted)																		
Collaborative revenue	\$23,740	\$64,916	\$9,983	\$13,791	\$3,546	\$4,981	\$5,050	\$5,100	\$18,677	\$28,800	\$100,800	\$21,500	\$34,916	\$23,329	\$41,598	\$64,953	\$64,343	\$99,623
FP-1039 (royalties; probability weighted by tumor type)																		
FPA008 (royalties; probability weighted)																		
<b>Total revenues, net</b>	<b>\$23,740</b>	<b>\$64,916</b>	<b>\$9,983</b>	<b>\$13,791</b>	<b>\$3,546</b>	<b>\$4,981</b>	<b>\$5,050</b>	<b>\$5,100</b>	<b>\$18,677</b>	<b>\$28,800</b>	<b>\$100,800</b>	<b>\$21,500</b>	<b>\$34,916</b>	<b>\$23,329</b>	<b>\$41,598</b>	<b>\$64,953</b>	<b>\$64,343</b>	<b>\$99,623</b>
<b>Expenses</b>																		
Research and development	\$29,417	\$34,039	\$28,778	\$32,785	\$8,926	\$11,873	\$10,000	\$10,100	\$40,899	\$42,535	\$44,236	\$45,563	\$46,930	\$46,338	\$49,305	\$50,291	\$51,297	\$52,323
Selling, general and administrative	\$8,338	\$11,216	\$9,009	\$10,427	\$3,280	\$3,024	\$3,054	\$3,085	\$12,443	\$12,941	\$13,458	\$13,997	\$14,557	\$15,139	\$15,593	\$16,061	\$16,543	\$17,039
<b>Total operating expenses</b>	<b>\$37,755</b>	<b>\$45,255</b>	<b>\$37,787</b>	<b>\$43,212</b>	<b>\$12,206</b>	<b>\$14,897</b>	<b>\$13,054</b>	<b>\$13,185</b>	<b>\$53,342</b>	<b>\$55,476</b>	<b>\$57,695</b>	<b>\$59,560</b>	<b>\$61,487</b>	<b>\$61,477</b>	<b>\$64,898</b>	<b>\$66,352</b>	<b>\$67,840</b>	<b>\$69,362</b>
<b>Operating income</b>	<b>(\$14,015)</b>	<b>\$19,661</b>	<b>(\$27,804)</b>	<b>(\$29,421)</b>	<b>(\$8,660)</b>	<b>(\$9,916)</b>	<b>(\$8,004)</b>	<b>(\$8,085)</b>	<b>(\$34,665)</b>	<b>(\$25,676)</b>	<b>\$43,105</b>	<b>(\$38,060)</b>	<b>(\$26,571)</b>	<b>(\$40,148)</b>	<b>(\$23,300)</b>	<b>(\$1,399)</b>	<b>(\$3,496)</b>	<b>\$30,261</b>
Interest income	\$58	\$114	\$98	\$129	\$16	\$50	\$51	\$48	\$164	\$112	\$121	\$123	\$91	\$58	\$26	\$14	\$11	\$25
Other income (expense) net	\$491	(\$65)	\$121	\$420	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>(Loss) income before benefit from income taxes</b>	<b>(\$13,466)</b>	<b>\$19,710</b>	<b>(\$27,595)</b>	<b>(\$28,872)</b>	<b>(\$8,644)</b>	<b>(\$9,866)</b>	<b>(\$7,954)</b>	<b>(\$8,037)</b>	<b>(\$34,501)</b>	<b>(\$25,564)</b>	<b>\$43,226</b>	<b>(\$37,937)</b>	<b>(\$26,480)</b>	<b>(\$40,090)</b>	<b>(\$23,274)</b>	<b>(\$1,385)</b>	<b>(\$3,485)</b>	<b>\$30,286</b>
Benefit (expense) from income taxes	\$5	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Net (loss) income</b>	<b>(\$13,461)</b>	<b>\$19,710</b>	<b>(\$27,595)</b>	<b>(\$28,872)</b>	<b>(\$8,644)</b>	<b>(\$9,866)</b>	<b>(\$7,954)</b>	<b>(\$8,037)</b>	<b>(\$34,501)</b>	<b>(\$25,564)</b>	<b>\$43,226</b>	<b>(\$37,937)</b>	<b>(\$26,480)</b>	<b>(\$40,090)</b>	<b>(\$23,274)</b>	<b>(\$1,385)</b>	<b>(\$3,485)</b>	<b>\$30,589</b>
<b>Earnings Per Share (GAAP)</b>	<b>(\$12.22)</b>	<b>\$10.35</b>	<b>(\$23.05)</b>	<b>(\$5.26)</b>	<b>(\$0.46)</b>	<b>(\$0.46)</b>	<b>(\$0.37)</b>	<b>(\$0.37)</b>	<b>(\$1.65)</b>	<b>(\$1.16)</b>	<b>\$1.75</b>	<b>(\$1.66)</b>	<b>(\$1.14)</b>	<b>(\$1.69)</b>	<b>(\$0.97)</b>	<b>(\$0.06)</b>	<b>(\$0.14)</b>	<b>\$1.11</b>
Shares Outstanding (Basic)	1,102	1,152	1,197	5,488	18,841	21,465	21,565	21,665	20,884	22,065	22,465	22,865	23,265	23,665	24,065	24,465	24,865	25,265
Shares Outstanding (Diluted)	1,102	1,904	1,197	6,588	21,041	23,685	23,765	23,865	23,084	24,285	24,685	25,085	25,485	25,885	26,285	26,685	27,085	27,485

Source: Company reports and Wells Fargo Securities, LLC estimates

## Required Disclosures



	Date	Publication Price (\$)	Rating Code	Val. Rng. Low	Val. Rng. High	Close Price (\$)
□	9/18/2013		IPO at \$13.00			
	10/14/2013		Abrahams, M.D.			
◆	10/14/2013	13.19	1	17.00	19.00	13.25
◆	3/3/2014	13.96	1	20.00	22.00	13.78
◆	5/9/2014	13.30	1	19.00	21.00	13.64

Source: Wells Fargo Securities, LLC estimates and Reuters data

### Symbol Key

▼	Rating Downgrade	◆	Initiation, Resumption, Drop or Suspend
▲	Rating Upgrade	■	Analyst Change
◆	Valuation Range Change	□	Split Adjustment

### Rating Code Key

1	Outperform/Buy	SR	Suspended
2	Market Perform/Hold	NR	Not Rated
3	Underperform/Sell	NE	No Estimate

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**FPRX:** Key risks, in our view, are clinical and regulatory failure of its programs, competition, and financing.

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As of: August 5, 2014

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