

Reason for report:

PROPRIETARY INSIGHTS

ZAFGEN, INC.

Sell-off Following 4Q14 Call Creates Attractive Buying Opportunity

• **Bottom Line:** ZFGN shares have consolidated following uncertainty created by announcements on the 4Q call which we believe do not reduce the probability of success (and may actually increase it) for the ongoing Ph3 study of beloranib in Prader-Willi syndrome (PWS). **Reiterate Outperform and \$61 price target.**

• **We recommend shares of ZFGN ahead of catalysts that should increase confidence that pipeline programs are on track.** First, we believe investors will be encouraged by a full enrollment announcement over the next couple of mos, following the delay in Ph3 data from late 4Q15 to early 2Q16, which we believe was driven by administrative/contract issues at a couple of large sites. We also expect positive Ph2 data in severe general obesity coincident with type 2 diabetes in 4Q/1Q to provide a positive readthrough to the lead indication of PWS. In addition, we expect ZFGN to confirm the regulatory path for hypothalamic injury associated obesity (HIAO) with the FDA/EMA over the balance of the yr, which will allow Ph3 to start next yr in this indication which doubles the orphan mkt opportunity for beloranib. Lastly, an IND for ZGN-839 will be filed this yr in NASH, where the ability to improve liver health by reregulating metabolic factors could drive significant value, we believe.

• **Investors have raised questions after the company reduced the bottom threshold entry criteria for BMI from 30 to 27 in the ongoing Ph3 "bestPWS" study.** We understand that this was done based on requests from the treatment community and to make the dossier portable for the EMA, as all other obesity drugs have used similar criteria. Since the Ph3 was already two-thirds enrolled, patients with PWS have lower lean mass, and previous data show that patients with BMI <40 actually responded better to beloranib than those with BMI >40, we do not expect this change to undermine the results and continue to believe that our 80% probability of success is appropriate/potentially conservative.

• **Although it was noted in company presentations/meetings at the beginning of 2015, investors have been wondering about the implications of the primary endpoint in bestPWS shifting from fat mass to body weight.** This came about following the company's second end of Ph2 meeting with FDA, when the agency evolved its thinking in large part due to leadership changes. We believe body weight is nearly interchangeable with fat mass, although the latter is closer to the physiologic issue for PWS patients who have poor muscle tone.

• **Although Ph2 didn't hit the p<0.05 mark for body weight, ZFGN has improved its testing procedures to improve compliance with the weighing procedure,** which requires fasting, voiding, and hospital gowns. Ph3 weigh-ins will take place with parents present and a robust checklist. In addition, the impact of these technical factors was meaningful for the Ph2 study which was very small (5-6 pts per arm) and short (4 wks) so small variations in weight mattered; however Ph3 should benefit from more patients (102) being treated for much longer (6 mos)

| Dec Yr | 1Q | 2Q | 3Q | 4Q | FY Rev | 1Q | 2Q | 3Q | 4Q | FY EPS | P/E |
|--------|-----|-----|-----|-----|--------|----------|----------|----------|----------|----------|-----|
| 2014A | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | (\$6.18) | (\$2.96) | (\$0.65) | (\$0.48) | (\$3.00) | NM |
| 2015E | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | (\$0.76) | (\$0.81) | (\$0.89) | (\$0.98) | (\$3.45) | NM |
| 2016E | -- | -- | -- | -- | 0.0 | -- | -- | -- | -- | (\$3.34) | NM |

Source: Company Information and Leerink Partners LLC Research
GAAP EPS presented

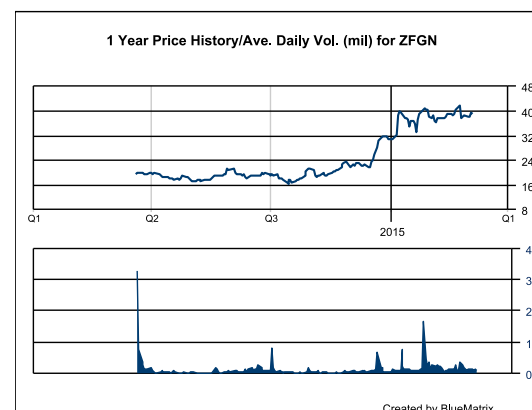
Key Stats:

(OTC Un:ZFGN)

| | |
|---------------------------------------|--|
| S&P 600 Health Care Index: | 1,669.10 |
| Price: | \$37.80 |
| Price Target: | \$61.00 |
| Methodology: | Probability-weighted DCF analysis, 11% discount rate |
| 52 Week High: | \$55.36 |
| 52 Week Low: | \$16.01 |
| Shares Outstanding (mil): | 28.8 |
| Market Capitalization (mil): | \$1,088.6 |
| Book Value/Share: | \$0.00 |
| Cash Per Share: | \$7.44 |
| Dividend (ann): | \$0.00 |
| Dividend Yield: | 0.0% |

Shares Outstanding (mil): Diluted; includes stock options

Cash Per Share: On a net basis as of 1Q15E



INVESTMENT THESIS

We rate ZFGN Shares Outperform. Zafgen (NASDAQ: ZFGN) is a biopharmaceutical company dedicated to the development of medicines to address the unmet need in obesity, with an initial focus on two orphan diseases that offer a potentially streamlined development path and high margin business model. We believe that ZFGN has an experienced management team with an outstanding track record executing in the field of drug discovery and commercialization. ZFGN's lead asset, beloranib, is a MetAP2 inhibitor that has generated compelling Phase II data in Prader-Willi syndrome (PWS) and severe obesity on a number of clinically relevant endpoints, in our view, and is now being studied in a registration-enabling Phase III PWS study expected to read out data by 1H15. We project an 80% probability of PWS approval in 2017, and peak gross PWS sales of ~\$700MM worldwide in 2029. Zafgen is also developing beloranib in hypothalamic-injury associated obesity (HIAO), where it also recently released positive proof-of-concept Phase IIa data and expects to initiate a registration-enabling study in HIAO in the near future. We project 60% probability of HIAO approval in 2018, and peak gross HIAO sales of ~\$445MM worldwide in 2029. The commercial opportunity presented by severe obesity holds the potential to be orders of magnitude larger than PWS and HIAO, though ZFGN will likely need support from a larger partner to unlock its full potential. Thus, while severe obesity afflicts ~16MM Americans in the US, we only model ~\$200MM in peak beloranib sales in non-PWS/HIAO patients, though in a partnership/acquisition (P&A) scenario, ZFGN is likely to receive considerably more value for beloranib in high prevalence indications. In the meantime, we believe that establishing broader proof-of-concept in orphan sub-populations offers a less risky and more rapid development path, and over the long term could position ZFGN as a very attractive partnership or takeout target. Likewise, a second generation MetAP2 inhibitor in preclinical development for general obesity, and a novel chemical class MetAP2 inhibitor in preclinical development for NASH/diabetes could provide significant upside to our price target as clinical catalysts are realized.

VALUATION

We derive a ~\$61 per share value for ZFGN using an 11% discount rate and a 2% terminal growth rate, representing a ~\$1,740MM market capitalization. Our price target assumes an 80% and a 60% probability of beloranib approval in PWS and HIAO, respectively, which leads to our peak net sales estimates of ~\$560MM and ~\$270MM in each indication. We only model ~\$200MM in peak sales in severe obesity, which we believe holds the potential to be very conservative if/when ZFGN generates pivotal beloranib data in orphan indications.

RISKS TO VALUATION

Risks to our valuation include disappointing clinical data, regulatory setbacks, dilution risk from an additional equity offering, and commercial shortfalls. Because ZFGN has only one late stage product, the occurrence of any of these could impact the stock significantly.

| ZFGN P&L (\$MM) GAAP | 2013 | 1Q14 | 2Q14 | 3Q14 | 4Q14 | 2014E | 1Q15E | 2Q15E | 3Q15E | 4Q15E | 2015E | 2016E | 2017E | 2018E | 2019E |
|------------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------|
| Beloranib PWS | - | - | - | - | - | - | - | - | - | - | - | - | 4.6 | 53.2 | 144.7 |
| Beloranib HIAO | - | - | - | - | - | - | - | - | - | - | - | - | - | 10.0 | 34.4 |
| Beloranib Severe Obesity | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total Revenue (p/w) | - | - | - | - | - | - | - | - | - | - | - | - | 4.6 | 63.2 | 179.1 |
| COGS | - | - | - | - | - | - | - | - | - | - | - | - | 0.5 | 6.3 | 17.9 |
| R&D | 9.6 | 3.3 | 4.7 | 12.1 | 7.3 | 27.4 | 16.0 | 18.0 | 20.0 | 22.0 | 76.0 | 76.0 | 68.4 | 61.6 | 62.7 |
| SG&A | 4.2 | 1.2 | 1.3 | 2.3 | 3.3 | 8.1 | 3.6 | 4.0 | 4.3 | 5.0 | 16.9 | 23.7 | 30.0 | 44.2 | 62.7 |
| Operating Expenses | 13.8 | 4.5 | 6.0 | 14.4 | 10.7 | 35.5 | 19.6 | 22.0 | 24.3 | 27.0 | 92.9 | 99.7 | 98.9 | 112.1 | 143.3 |
| Operating Income | (13.8) | (4.5) | (6.0) | (14.4) | (10.7) | (35.5) | (19.6) | (22.0) | (24.3) | (27.0) | (92.9) | (99.7) | (94.2) | (48.9) | 35.8 |
| Interest Income (Expense) | - | (0.0) | (0.4) | (0.2) | (0.2) | (0.8) | (0.2) | (0.2) | (0.2) | (0.2) | (0.8) | (0.4) | (0.3) | - | - |
| FX Gains/Losses | (0.2) | 0.1 | 0.0 | (0.1) | (0.1) | (0.1) | - | - | - | - | - | - | - | - | - |
| Total Other Income (expense) | (0.2) | 0.1 | (0.4) | (0.3) | (0.3) | (0.9) | - | - | - | - | - | (0.4) | (0.3) | - | - |
| EBT | (14.0) | (4.5) | (6.4) | (14.7) | (10.9) | (36.5) | (19.6) | (22.0) | (24.3) | (27.0) | (92.9) | (100.0) | (94.5) | (48.9) | 35.8 |
| Tax | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Net Income (Loss) | (14.2) | (4.5) | (6.4) | (14.7) | (10.9) | (36.6) | (19.6) | (22.0) | (24.3) | (27.0) | (92.9) | (100.0) | (94.5) | (48.9) | 35.8 |
| Diluted EPS | \$ (19.53) | \$ (6.18) | \$ (2.96) | \$ (0.65) | \$ (0.48) | \$ (3.00) | \$ (0.76) | \$ (0.81) | \$ (0.89) | \$ (0.98) | \$ (3.45) | \$ (3.34) | \$ (2.91) | \$ (1.46) | \$ 1.04 |
| Basic Shares Outstanding | 0.7 | 0.7 | 2.2 | 22.7 | 22.8 | 12.2 | 25.7 | 27.3 | 27.4 | 27.5 | 27.0 | 30.0 | 32.5 | 33.5 | 34.5 |
| Diluted Shares Outstanding | 0.7 | 0.7 | 2.2 | 22.7 | 22.8 | 12.2 | 25.7 | 27.3 | 27.4 | 27.5 | 27.0 | 30.0 | 32.5 | 33.5 | 34.5 |

Source: SEC Filings and Leerink Partners Research

| ZFGN BS & CFS (\$MM) GAAP | 2013 | 1Q14 | 2Q14 | 3Q14 | 4Q14 | 2014E | 1Q15E | 2Q15E | 3Q15E | 4Q15E | 2015E | 2016E | 2017E | 2018E | 2019E |
|----------------------------|---------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Net Cash | 35.5 | 31.1 | 126.9 | 119.6 | 102.4 | 102.4 | 213.9 | 193.7 | 170.3 | 143.5 | 143.5 | 151.4 | 162.6 | 128.1 | 178.9 |
| Cash & Equivalents | 35.5 | 38.5 | 134.2 | 127.0 | 115.5 | 115.5 | 225.9 | 204.7 | 180.3 | 152.4 | 152.4 | 156.1 | 166.3 | 128.1 | 178.9 |
| Debt | - | 7.4 | 7.4 | 7.4 | 13.1 | 13.1 | 12.0 | 11.0 | 10.0 | 8.9 | 8.9 | 4.7 | 3.7 | - | - |
| Change in Cash | 25.6 | 3.0 | 95.8 | (7.2) | (11.5) | 80.0 | 110.4 | (21.3) | (24.4) | (27.9) | 36.9 | 3.8 | 10.2 | (38.3) | 50.9 |
| Operating Cash Flow | (15.0) | (4.0) | (6.9) | (6.7) | (17.2) | (34.9) | (18.0) | (20.2) | (22.4) | (24.8) | (85.5) | (87.1) | (79.1) | (28.3) | 60.9 |
| Net Income (Loss) | (14.0) | (4.5) | (6.4) | (14.7) | (10.9) | (36.5) | (19.6) | (22.0) | (24.3) | (27.0) | (92.9) | (100.0) | (94.5) | (48.9) | 35.8 |
| SOE | 0.4 | 0.2 | 0.4 | 0.9 | 0.6 | 2.0 | 1.6 | 1.8 | 1.9 | 2.2 | 7.4 | 9.0 | 9.8 | 11.6 | 15.0 |
| D&A | 0.0 | 0.0 | - | - | - | 0.0 | - | - | - | - | - | 4.0 | 5.6 | 9.0 | 10.0 |
| Other | (1.4) | 0.3 | (0.9) | 7.1 | (6.9) | (0.4) | - | - | - | - | - | - | - | - | - |
| Investing Cash Flow | (0.0) | (0.0) | - | - | - | (0.0) | - | - | (1.0) | (2.0) | (3.0) | (5.0) | (7.0) | (10.0) | (10.0) |
| CapEx | (0.0) | (0.0) | - | - | - | (0.0) | - | - | (1.0) | (2.0) | (3.0) | (5.0) | (7.0) | (10.0) | (10.0) |
| Other | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Financing Cash flow | 40.6 | 7.0 | 102.7 | (0.5) | 5.7 | 114.9 | 128.5 | (1.0) | (1.0) | (1.0) | 125.3 | 95.8 | 96.3 | - | - |
| Equity Issuance (Buyback) | 40.8 | 0.4 | 102.7 | - | - | 103.1 | 129.5 | - | - | - | 129.5 | 100.0 | 100.0 | - | - |
| Debt Issuance (Retirement) | - | 7.4 | - | (0.5) | 5.7 | 12.6 | (1.0) | (1.0) | (1.0) | (1.0) | (4.2) | (4.2) | (3.7) | - | - |
| Other | (0.2) | (0.8) | - | - | - | (0.8) | - | - | - | - | - | - | - | - | - |

Source: SEC Filings and Leerink Partners Research

| ZFGN DCF Analysis | 2014 | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E | 2022E | 2023E | 2024E | 2025E | 2026E | 2027E | 2028E | 2029E | 2030E | 2031E | TV |
|----------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Cash Flow From Operations (\$MM) | (35) | (85) | (87) | (79) | (28) | 61 | 124 | 238 | 282 | 306 | 361 | 389 | 415 | 438 | 458 | 468 | 353 | 202 | |
| Cash Flow From Investing (\$MM) | (0) | (3) | (5) | (7) | (10) | (10) | (10) | (10) | (10) | (10) | (10) | (10) | (10) | (10) | (10) | (10) | (10) | (10) | |
| Net Borrowing (Repayment) (\$MM) | 5 | (4) | (4) | (4) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Free Cash Flow (\$MM) | (30) | (93) | (96) | (90) | (38) | 51 | 114 | 228 | 272 | 296 | 351 | 379 | 405 | 428 | 448 | 458 | 343 | 192 | 2181 |
| Discount Periods | - | - | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | |
| NPV FCF (\$MM) | - | (69) | (89) | (75) | (29) | 34 | 70 | 125 | 135 | 132 | 141 | 137 | 132 | 125 | 119 | 109 | 74 | 37 | 422 |

| | |
|------------------------------------|-----------------|
| Sum NPV FCF (\$MM) | 1529 |
| Net Cash 1Q15E | 214 |
| Implied ZFGN Mkt Cap (\$MM) | \$ 1,743 |
| ZFGN Per Share Value | \$ 60.57 |

| | |
|----------------------------|------|
| Cost of Equity | 11% |
| TG Rate | 2% |
| Diluted Shares Outstanding | 28.8 |

Source: Leerink Partners Research

| Prader Willi Syndrome Revenue Model | 2014 | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E | 2022E | 2023E | 2024E | 2025E | 2026E | 2027E | 2028E | 2029E | 2030E | 2031E |
|---------------------------------------|--------------|--------------|--------------|--------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| PWS Patients in the US | 7,500 | 7,568 | 7,636 | 7,704 | 7,774 | 7,844 | 7,914 | 7,985 | 8,057 | 8,130 | 8,203 | 8,277 | 8,351 | 8,426 | 8,502 | 8,579 | 8,656 | 8,734 |
| % >12 years old | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% |
| US PWS Patients >12 yr/old | 3,750 | 3,784 | 3,818 | 3,852 | 3,887 | 3,922 | 3,957 | 3,993 | 4,029 | 4,065 | 4,102 | 4,138 | 4,176 | 4,213 | 4,251 | 4,289 | 4,328 | 4,367 |
| % treated with Beloranib | 0.0% | 0.0% | 0.0% | 1.0% | 8.0% | 16.0% | 21.0% | 25.0% | 28.0% | 30.0% | 32.0% | 33.0% | 34.0% | 35.0% | 35.0% | 35.0% | 28.0% | 14.0% |
| PWS Patients on Beloranib | - | - | - | 39 | 311 | 627 | 831 | 998 | 1,128 | 1,219 | 1,312 | 1,366 | 1,420 | 1,475 | 1,488 | 1,501 | 1,212 | 611 |
| Annual Cost of Therapy | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 |
| Gross Revenues (\$MM) | \$0.0 | \$0.0 | \$0.0 | \$5.8 | \$46.6 | \$94.1 | \$124.6 | \$149.7 | \$169.2 | \$182.9 | \$196.9 | \$204.9 | \$213.0 | \$221.2 | \$223.2 | \$225.2 | \$181.8 | \$91.7 |
| %<12 years old | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% |
| US PWS Patients <12 yr/old | 3,750 | 3,784 | 3,818 | 3,852 | 3,887 | 3,922 | 3,957 | 3,993 | 4,029 | 4,065 | 4,102 | 4,138 | 4,176 | 4,213 | 4,251 | 4,289 | 4,328 | 4,367 |
| % treated with Beloranib | 0.0% | 0.0% | 0.0% | 0.0% | 1.0% | 8.5% | 16.0% | 21.0% | 25.0% | 28.0% | 30.0% | 32.0% | 33.0% | 34.0% | 35.0% | 35.0% | 24.5% | 12.3% |
| PWS Patients on Beloranib | - | - | - | - | 39 | 333 | 633 | 838 | 1,007 | 1,138 | 1,230 | 1,324 | 1,378 | 1,433 | 1,488 | 1,501 | 1,060 | 535 |
| Annual Cost of Therapy | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 |
| Gross Revenues (\$MM) | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$5.8 | \$50.0 | \$95.0 | \$125.8 | \$151.1 | \$170.7 | \$184.6 | \$198.6 | \$206.7 | \$214.9 | \$223.2 | \$225.2 | \$159.1 | \$80.2 |
| Approval Probability | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% |
| US P(w) Beloranib PWS Revenues | \$0.0 | \$0.0 | \$0.0 | \$4.6 | \$42.0 | \$115.3 | \$175.7 | \$220.4 | \$256.2 | \$282.9 | \$305.2 | \$322.8 | \$335.7 | \$348.9 | \$357.1 | \$360.3 | \$272.7 | \$137.6 |
| PWS Patients in the EU | 12,000 | 12,108 | 12,217 | 12,327 | 12,438 | 12,550 | 12,663 | 12,777 | 12,892 | 13,008 | 13,125 | 13,243 | 13,362 | 13,482 | 13,604 | 13,726 | 13,850 | 13,974 |
| % >12 years old | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% |
| EU PWS Patients >12 yr/old | 6,000 | 6,054 | 6,108 | 6,163 | 6,219 | 6,275 | 6,331 | 6,388 | 6,446 | 6,504 | 6,562 | 6,621 | 6,681 | 6,741 | 6,802 | 6,863 | 6,925 | 6,987 |
| % treated with Beloranib | 0.0% | 0.0% | 0.0% | 0.0% | 2.5% | 4.0% | 6.0% | 8.0% | 11.0% | 13.0% | 15.0% | 16.0% | 17.0% | 18.0% | 19.0% | 20.0% | 16.0% | 8.0% |
| PWS Patients on Beloranib | - | - | - | - | 155 | 251 | 380 | 511 | 709 | 846 | 984 | 1,059 | 1,136 | 1,213 | 1,292 | 1,373 | 1,108 | 559 |
| Annual Cost of Therapy | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 |
| Gross Revenues (\$MM) | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$14.0 | \$22.6 | \$34.2 | \$46.0 | \$63.8 | \$76.1 | \$88.6 | \$95.3 | \$102.2 | \$109.2 | \$116.3 | \$123.5 | \$99.7 | \$50.3 |
| %<12 years old | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% |
| US PWS Patients <12 yr/old | 6,000 | 6,054 | 6,108 | 6,163 | 6,219 | 6,275 | 6,331 | 6,388 | 6,446 | 6,504 | 6,562 | 6,621 | 6,681 | 6,741 | 6,802 | 6,863 | 6,925 | 6,987 |
| % treated with Beloranib | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 2.5% | 4.0% | 6.0% | 8.0% | 11.0% | 13.0% | 15.0% | 17.0% | 18.0% | 19.0% | 20.0% | 10.0% | 4.0% |
| PWS Patients on Beloranib | - | - | - | - | - | 157 | 253 | 383 | 516 | 715 | 853 | 993 | 1,136 | 1,213 | 1,292 | 1,373 | 692 | 279 |
| Annual Cost of Therapy | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 | \$90,000 |
| Gross Revenues (\$MM) | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$14.1 | \$22.8 | \$34.5 | \$46.4 | \$64.4 | \$76.8 | \$89.4 | \$102.2 | \$109.2 | \$116.3 | \$123.5 | \$62.3 | \$25.2 |
| Approval Probability | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% |
| EU P(w) Beloranib PWS Revenues | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$11.2 | \$29.4 | \$45.6 | \$64.4 | \$88.2 | \$112.4 | \$132.3 | \$147.8 | \$163.6 | \$174.7 | \$186.1 | \$197.7 | \$129.6 | \$60.4 |
| WW Beloranib Gross Sales | \$0.0 | \$0.0 | \$0.0 | \$5.8 | \$66.5 | \$180.8 | \$276.6 | \$356.0 | \$430.5 | \$494.1 | \$546.8 | \$588.2 | \$624.1 | \$654.5 | \$679.0 | \$697.5 | \$502.9 | \$247.4 |
| WW Beloranib P(w) Sales | \$0.0 | \$0.0 | \$0.0 | \$4.6 | \$53.2 | \$144.7 | \$221.3 | \$284.8 | \$344.4 | \$395.3 | \$437.4 | \$470.6 | \$499.3 | \$523.6 | \$543.2 | \$558.0 | \$402.3 | \$197.9 |

| Assumptions | |
|-------------------------|-----------|
| Beloranib US Cost | \$150,000 |
| Beloranib EU Cost | \$90,000 |
| Probability of Approval | 80% |

Source: Company Presentations and Leerink Partners Research

| HIAO Revenue Model | 2014 | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E | 2022E | 2023E | 2024E | 2025E | 2026E | 2027E | 2028E | 2029E | 2030E | 2031E |
|--|--------------|--------------|--------------|--------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| HIAO Patients in the US | 6,260 | 6,316 | 6,373 | 6,431 | 6,488 | 6,547 | 6,606 | 6,665 | 6,725 | 6,786 | 6,847 | 6,908 | 6,971 | 7,033 | 7,097 | 7,160 | 7,225 | 7,290 |
| % with post-treatment hypothalamic dysfunction | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% |
| beloranib HIAO candidates | 3,130 | 3,158 | 3,187 | 3,215 | 3,244 | 3,273 | 3,303 | 3,333 | 3,363 | 3,393 | 3,423 | 3,454 | 3,485 | 3,517 | 3,548 | 3,580 | 3,612 | 3,645 |
| % treated with Beloranib | 0.0% | 0.0% | 0.0% | 0.0% | 2.0% | 6.0% | 13.0% | 18.0% | 24.0% | 29.0% | 32.0% | 34.0% | 36.0% | 38.0% | 40.0% | 40.0% | 32.0% | 16.0% |
| Patients on Beloranib | - | - | - | - | 65 | 196 | 429 | 600 | 807 | 984 | 1,095 | 1,174 | 1,255 | 1,336 | 1,419 | 1,432 | 1,156 | 583 |
| Annual Cost of Therapy | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 | \$150,000 |
| Gross Revenues (\$MM) | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$9.7 | \$29.5 | \$64.4 | \$90.0 | \$121.1 | \$147.6 | \$164.3 | \$176.2 | \$188.2 | \$200.4 | \$212.9 | \$214.8 | \$173.4 | \$87.5 |
| Approval Probability | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% |
| US P(w) Beloranib HIAO Revenues | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$5.8 | \$17.7 | \$38.6 | \$54.0 | \$72.6 | \$88.6 | \$98.6 | \$105.7 | \$112.9 | \$120.3 | \$127.7 | \$128.9 | \$104.0 | \$52.5 |
| HIAO Patients in the EU | 14,850 | 14,984 | 15,119 | 15,255 | 15,392 | 15,530 | 15,670 | 15,811 | 15,953 | 16,097 | 16,242 | 16,388 | 16,536 | 16,684 | 16,835 | 16,986 | 17,139 | 17,293 |
| % with post-treatment hypothalamic dysfunction | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% |
| beloranib HIAO candidates | 7,425 | 7,492 | 7,559 | 7,627 | 7,696 | 7,765 | 7,835 | 7,906 | 7,977 | 8,049 | 8,121 | 8,194 | 8,268 | 8,342 | 8,417 | 8,493 | 8,569 | 8,647 |
| % treated with Beloranib | 0.0% | 0.0% | 0.0% | 0.0% | 1.0% | 4.0% | 8.0% | 12.0% | 16.0% | 20.0% | 22.0% | 24.0% | 26.0% | 28.0% | 30.0% | 30.0% | 24.0% | 12.0% |
| Patients on Beloranib | - | - | - | - | 77 | 311 | 627 | 949 | 1,276 | 1,610 | 1,787 | 1,967 | 2,150 | 2,336 | 2,525 | 2,548 | 2,057 | 1,038 |
| Annual Cost of Therapy | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 |
| Gross Revenues (\$MM) | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$6.9 | \$28.0 | \$56.4 | \$85.4 | \$114.9 | \$144.9 | \$160.8 | \$177.0 | \$193.5 | \$210.2 | \$227.3 | \$229.3 | \$185.1 | \$93.4 |
| Approval Probability | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% |
| EU P(w) Beloranib HIAO Revenues | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$4.2 | \$16.8 | \$33.8 | \$51.2 | \$68.9 | \$86.9 | \$96.5 | \$106.2 | \$116.1 | \$126.1 | \$136.4 | \$137.6 | \$111.1 | \$56.0 |
| WW Gross Beloranib HIAO Revenues | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$16.7 | \$57.4 | \$120.8 | \$175.4 | \$235.9 | \$292.5 | \$325.1 | \$353.2 | \$381.7 | \$410.7 | \$440.2 | \$444.1 | \$358.5 | \$180.9 |
| WW P(w) Beloranib HIAO Revenues | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$10.0 | \$34.4 | \$72.5 | \$105.2 | \$141.6 | \$175.5 | \$195.1 | \$211.9 | \$229.0 | \$246.4 | \$264.1 | \$266.5 | \$215.1 | \$108.5 |
| Assumptions | | | | | | | | | | | | | | | | | | |
| Beloranib US Cost | \$150,000 | | | | | | | | | | | | | | | | | |
| Beloranib EU Cost | \$90,000 | | | | | | | | | | | | | | | | | |
| Probability of Approval | 60% | | | | | | | | | | | | | | | | | |

Source: Company Presentations and Leerink Partners Research

| Product | Event | Timing |
|-----------|---|--------|
| Beloranib | Initiate US Phase III PWS Trial | 3Q14 |
| Beloranib | Initiate Phase IIb Severe Obesity Trial | 4Q14 |
| Beloranib | Phase IIa HIAO Data | 1Q15 |
| ZGN-839 | File NASH/Type II Diabetes IND | 2015 |
| Beloranib | 6 Month Interim Severe Obesity Data | 4Q15 |
| Beloranib | Initiate Phase III HIAO Study | 2015 |
| Beloranib | 6 Mo. Phase III PWS Data | 2Q16 |

Source: Company Presentations and Leerink Partners Research

Disclosures Appendix

Analyst Certification

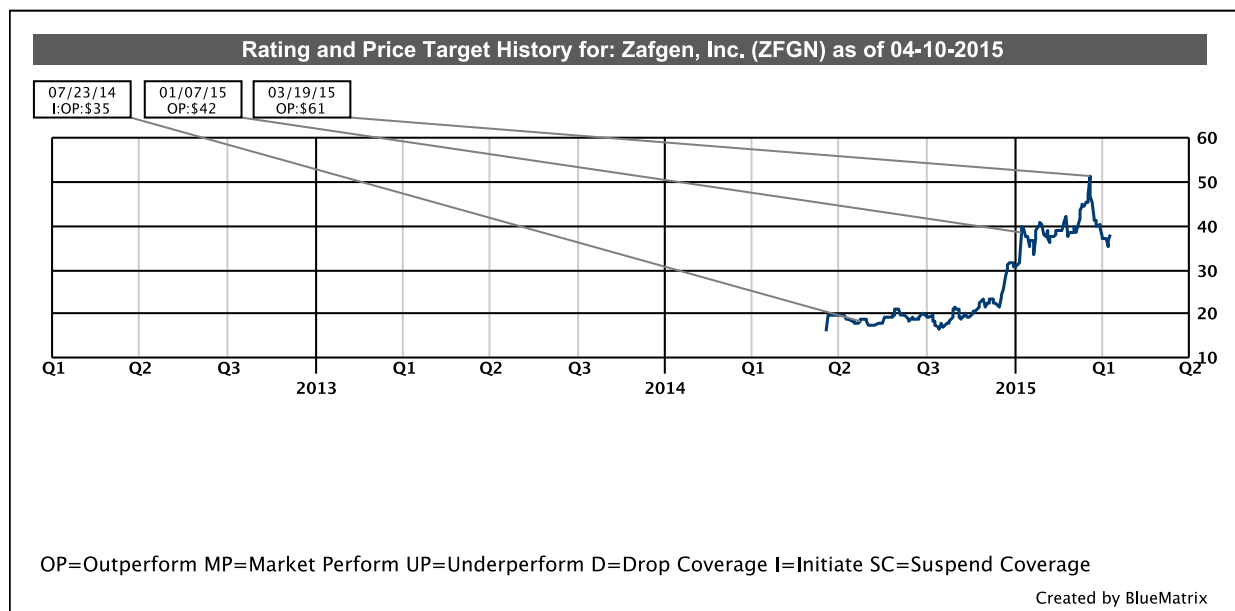
I, Joseph P. Schwartz, certify that the views expressed in this report accurately reflect my views and that no part of my compensation was, is, or will be directly related to the specific recommendation or views contained in this report.

Valuation

We derive a ~\$61 per share value for ZFGN using an 11% discount rate and a 2% terminal growth rate, representing a ~\$1,740MM market capitalization. Our price target assumes an 80% and a 60% probability of beloranib approval in PWS and HIAO, respectively, which leads to our peak net sales estimates of ~\$560MM and ~\$270MM in each indication. We only model ~\$200MM in peak sales in severe obesity, which we believe holds the potential to be very conservative if/when ZFGN generates pivotal beloranib data in orphan indications.

Risks to Valuation

Risks to our valuation include disappointing clinical data, regulatory setbacks, dilution risk from an additional equity offering, and commercial shortfalls. Because ZFGN has only one late stage product, the occurrence of any of these could impact the stock significantly.



| Distribution of Ratings/Investment Banking Services (IB) as of 03/31/15 | | | | |
|---|-------|---------|-----------------------|---------|
| Rating | Count | Percent | IB Serv./Past 12 Mos. | |
| | | | Count | Percent |
| BUY [OP] | 151 | 70.20 | 55 | 36.00 |
| HOLD [MP] | 64 | 29.80 | 2 | 3.00 |
| SELL [UP] | 0 | 0.00 | 0 | 0.00 |

Explanation of Ratings

Outperform (Buy): We expect this stock to outperform its benchmark over the next 12 months.

Market Perform (Hold/Neutral): We expect this stock to perform in line with its benchmark over the next 12 months.

Underperform (Sell): We expect this stock to underperform its benchmark over the next 12 months. The degree of outperformance or underperformance required to warrant an Outperform or an Underperform rating should be commensurate with the risk profile of the company.

For the purposes of these definitions the relevant benchmark will be the S&P 600® Health Care Index for issuers with a market capitalization of less than \$2 billion and the S&P 500® Health Care Index for issuers with a market capitalization over \$2 billion.

Important Disclosures

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In the past 12 months, the Firm has received compensation for providing investment banking services to Zafgen, Inc. .

Leerink Partners LLC makes a market in Zafgen, Inc.

Leerink Partners LLC has acted as the manager for a public offering of Zafgen, Inc. in the past 12 months.

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